

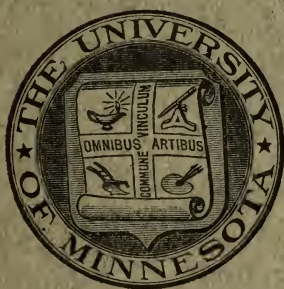
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Magazined
1913-14

The University of Minnesota

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THE COLLEGE OF EDUCATION

1913-1914



BULLETIN OF THE UNIVERSITY OF MINNESOTA
VOL. XVI, NO. 19. NOVEMBER 1913

Entered at the Post Office
in Minneapolis as second-class matter
MINNEAPOLIS, MINN.

The Bulletin of the University of Minnesota is issued as often as twice a month during the University year.

The Bulletin comprises—

Original Series. Containing the reports of the President and of the Board of Regents, the Bulletin of General Information, the annual announcements of the individual colleges of the University, etc.

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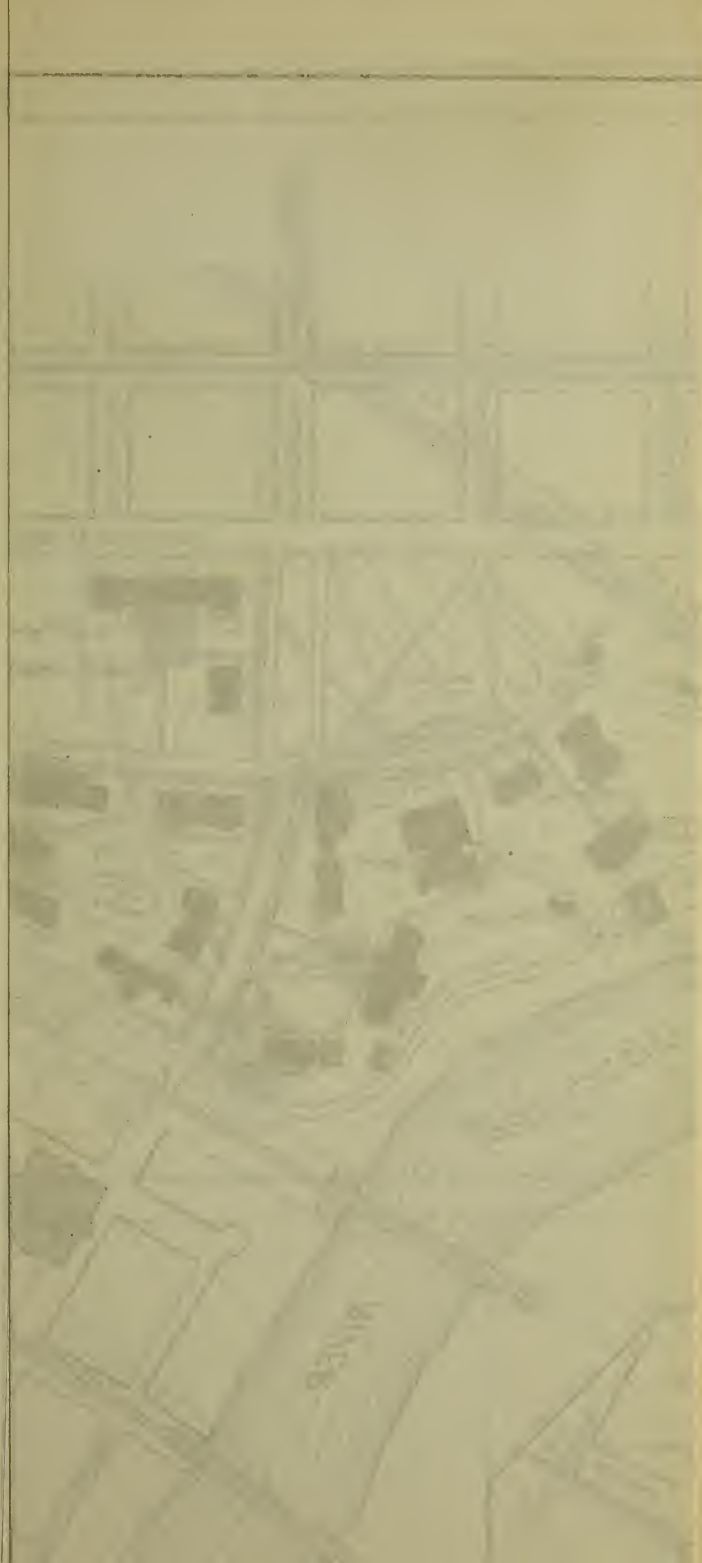
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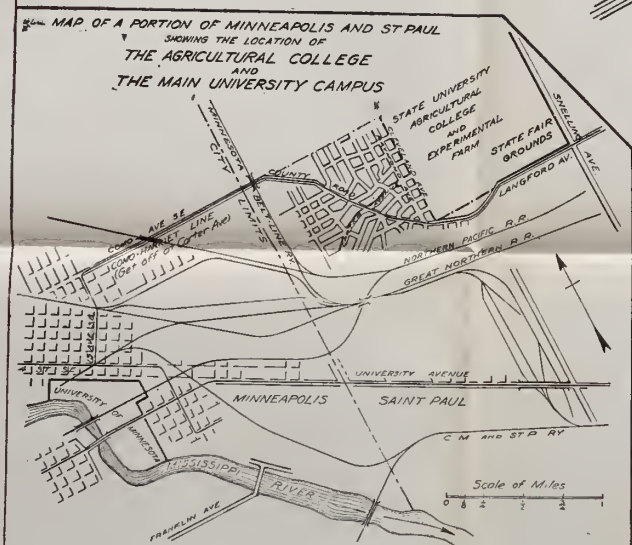
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MAP OF THE CAMPUS
 UNIVERSITY OF MINNESOTA
 Scale of Feet
 0 50 100 200 300 400

The University of Minnesota

THE COLLEGE OF EDUCATION

1913-1914



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1913							1914													
JULY							JANUARY							JULY						
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UNIVERSITY CALENDAR

1913-1914

The University year covers a period of thirty-eight weeks, beginning on the second Tuesday in September. Commencement Day is always the second Thursday in June.

1913

September	2	Tuesday	Registration closes except for new students
September	2-9	Week	Fees payable except for new students
September	8-15	Week	Entrance examinations, registration of new students, and payment of fees
September	10-16	Week	Military encampment of cadets
September	17	Wednesday	First semester begins
Sept. 29 - Oct.	4	Week	Second semester condition examinations
November	26	Wednesday	Thanksgiving recess begins 9:00 p.m.
December	1	Monday	Thanksgiving recess ends 8:00 a.m.
December	19	Friday	Christmas vacation begins 9:00 p.m.

1914

January	6	Tuesday	Christmas vacation ends 8:00 a.m.
January	20	Tuesday	Registration for second semester closes
January	26	Monday	Final examinations begin
January	27	Tuesday	Payment of fees for second semester closes
February	4	Wednesday	Second semester begins
February	12	Thursday	Lincoln's Birthday: a holiday
February	13	Friday	First semester class reports due
April	8	Wednesday	Easter recess begins 9:00 p.m.
April	16	Thursday	Easter recess ends 8:00 a.m.
April	20-25	Week	First semester condition examinations
May	30	Saturday	Decoration Day: a holiday
June	1	Monday	Final examinations begin
June	6	Saturday	Second semester closes
June	7	Sunday	Baccalaureate service
June	8	Monday	Senior class day exercises
June	10	Wednesday	Alumni Day
June	11	Thursday	Forty-second Annual Commencement
June	12	Friday	Summer vacation begins

The University year for 1914-15 will begin Tuesday, September 8.

THE UNIVERSITY

THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

THE COLLEGE OF ENGINEERING AND THE MECHANIC ARTS

THE DEPARTMENT OF AGRICULTURE, including—

THE COLLEGE OF AGRICULTURE

THE COLLEGE OF FORESTRY, including—

FOREST EXPERIMENT STATIONS AT ITASCA AND CLOQUET

THE CENTRAL SCHOOL OF AGRICULTURE, UNIVERSITY FARM, including—

THE DAIRY SCHOOL

THE SHORT COURSE FOR FARMERS

TEACHERS' SUMMER TRAINING SCHOOL

THE SCHOOL OF TRACTION ENGINEERING

THE NORTHWEST SCHOOL OF AGRICULTURE, CROOKSTON

THE WEST CENTRAL SCHOOL OF AGRICULTURE, MORRIS

THE EXPERIMENT STATIONS, including—

THE MAIN STATION, ST. ANTHONY PARK

THE NORTHWEST EXPERIMENT STATION, CROOKSTON

THE NORTH CENTRAL EXPERIMENT STATION, GRAND RAPIDS

THE WEST CENTRAL EXPERIMENT STATION, MORRIS

THE NORTHEAST DEMONSTRATION FARM AND EXPERIMENT STATION, DULUTH

THE SOUTHEAST DEMONSTRATION FARM AND EXPERIMENT STATION, WASECA

THE FRUIT BREEDING FARM, ZUMBRA HEIGHTS

THE LAW SCHOOL

THE MEDICAL SCHOOL, including—

THE SCHOOL FOR NURSES

THE COLLEGE OF DENTISTRY

THE COLLEGE OF PHARMACY

THE SCHOOL OF MINES, including—

MINNESOTA SCHOOL OF MINES EXPERIMENT STATION

THE SCHOOL OF ANALYTICAL AND APPLIED CHEMISTRY

THE COLLEGE OF EDUCATION

THE GRADUATE SCHOOL

THE UNIVERSITY EXTENSION SERVICE

GENERAL EXTENSION DIVISION

AGRICULTURAL EXTENSION DIVISION

THE BOARD OF REGENTS

The Hon. JOHN LIND, Minneapolis, President of the Board	-	-	-	-	-	1914
GEORGE EDGAR VINCENT, Minneapolis	-	-	-	-	-	<i>Ex-Officio</i>
The President of the University						
The Hon. ADOLPH O. EBERHART, Mankato	-	-	-	-	-	<i>Ex-Officio</i>
The Governor of the State						
The Hon. C. G. SCHULZ, St. Paul	-	-	-	-	-	<i>Ex-Officio</i>
The State Superintendent of Public Instruction						
The Hon. JOHN G. WILLIAMS, Duluth	-	-	-	-	-	1914
The Hon. A. E. RICE, Willmar	-	-	-	-	-	1915
The Hon. CHARLES L. SOMMERS, St. Paul	-	-	-	-	-	1915
The Hon. B. F. NELSON, Minneapolis	-	-	-	-	-	1916
The Hon. PIERCE BUTLER, St. Paul	-	-	-	-	-	1916
The Hon. FRED B. SNYDER, Minneapolis	-	-	-	-	-	1916
The Hon. W. J. MAYO, Rochester	-	-	-	-	-	1919
The Hon. MILTON M. WILLIAMS, Little Falls	-	-	-	-	-	1919

EXECUTIVE OFFICERS

GEORGE EDGAR VINCENT, Ph.D., LL.D., President
ERNEST B. PIERCE, B.A., Registrar
GEORGE H. HAYES, University Comptroller and Secretary of the Board of Regents
JAMES T. GEROULD, B.A., Librarian
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FRANCIS C. SHENEHON, C.E., Dean of the College of Engineering and the Mechanic Arts
ALBERT F. WOODS, M.A., Dean and Director of the Department of Agriculture
EDWARD M. FREEMAN, Ph.D., Assistant Dean of the Department of Agriculture
WILLIAM R. VANCE, Ph.D., LL.B., Dean of the Law School
ELIAS POTTER LYON, Ph.D., M.D., Dean of the Medical School
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FREDERICK J. WULLING, Ph.D., LL.M., Dean of the College of Pharmacy
WILLIAM R. APPLEBY, M.A., Dean of the School of Mines
GEORGE B. FRANKFORTER, M.A., Ph.D., Dean of the School of Chemistry
GEORGE F. JAMES, Ph.D., Dean of the College of Education
GUY STANTON FORD, Ph.D., Dean of the Graduate School
RICHARD R. PRICE, M.A., Director of University Extension
MARGARET SWEENEY, Ph.D., Dean of Women

COLLEGE OF EDUCATION

FACULTY

GEORGE EDGAR VINCENT, Ph.D., LL.D., President	1005 5th St. S. E.
CYRUS NORTHROP, LL.D., President, Emeritus	519 10th Ave. S. E.
GEORGE F. JAMES, Ph.D., Dean and Professor of Education	316 10th Ave. S. E.
DAVID L. KIEHLE, LL.D., Professor of Education, Emeritus	266 25th St. N., Portland, Ore.
ALBERT W. RANKIN, B.A., Professor of Education	916 5th St. S. E.
FLETCHER HARPER SWIFT, Ph.D., Professor of Education	215 Walnut St. S. E.
ASHLEY V. STORM, M.A., Professor of Agricultural Education	1827 4th St. S. E.
SAMUEL QUIGLEY, M.A., Assistant Professor of Education	522 15th Ave. S. E.
*RAYMOND A. KENT, M.A., Assistant Professor of Education and Principal of the University High School	State Capitol, St. Paul
JOHN F. DOWNEY, M.A., C.E., Professor of Mathematics	1115 5th St. S. E.
JOHN G. MDORE, B.A., Professor of German	2810 University Ave. S. E.
†HARDIN CRAIG, Ph.D., Professor of English	The Leamington
WILLIAM H. EMMONS, Ph.D., Professor of Geology	719 7th St. S. E.
‡CHARLES W. BENTON, M.A., Litt.D., Professor of French	516 9th Ave. S. E.
JOSEPH M. THOMAS, Ph.D., Professor of Rhetoric	623 14th Ave. S. E.
JOHN CORRIN HUTCHINSON, B.A., Professor of Greek	3806 Blaisdell Ave.
CHARLES PETER SIGERFOOS, Ph.D., Professor of Animal Biology	1023 University Ave. S. E.
JOHN ZELENY, Ph.D., Professor of Physics	712 10th Ave. S. E.
GEORGE B. FRANKFORTER, Ph.D., Professor of Chemistry	525 E. River Road
JOHN J. FLATHER, Ph.B., M.M.E., Professor of Mechanical Engineering	315 11th Ave. S. E.
FRANCIS P. LEAVENWORTH, M.A., Professor of Astronomy	317 17th Ave. S. E.
JOSEPH BROWN PIKE, M.A., Professor of Latin	1025 6th St. S. E.
SAMUEL G. SMITH, Ph.D., LL.D., Professor of Sociology	The Aberdeen, St. Paul

*Absent on leave 1913-14.

†Absent on leave second semester 1913-14.

‡Died November 11, 1913.

NORMAN WILDE, Ph.D., Professor of Philosophy and Psychology	901 6th St. S. E.
FRANK MALOY ANDERSON, M.A., Professor of History	1629 University Ave. S. E.
*WILLIAM A. SCHAPER, Ph.D., Professor of Political Science	
*FREDERIC E. CLEMENTS, Ph.D., Professor of Botany	
JOHN HENRY GRAY, Ph.D., Professor of Economics	412 Walnut St. S. E.
ANDREW A. STOMBERG, M.S., Professor of Scandinavian	531 Walnut St. S. E.
CARLYLE M. SCOTT, Professor of Music	3322 Lyndale Ave. S.
LOUIS J. COOKE, M.D., Director of Gynmasium	909 6th St. S. E.

INSTRUCTORS

JESSIE W. BOYCE, B.A., High School	1112 4th St. S. E.
CHARLES M. HOLT, B.A., Education	1400 Willow St.
LAURA FRANCES KENDALL, Music	3529 Colfax Ave. S.
ALICE J. MOTT, Ph.D., High School	423 Beacon St. S. E.
B. F. PITTENGER, M.A., Education	316 12th Ave. S. E.

LECTURERS

GEORGE B. AITON, High School Inspector	1601 University Ave. S. E.
S. A. CHALLMAN, Commissioner of School Buildings	1107 7th St. S. E.
E. M. PHILLIPS, Rural School Commissioner	1946 Laurel Ave., St. Paul

*Absent on leave 1913-14.

GENERAL INFORMATION

The College of Education was authorized by a special enactment of the Legislature of Minnesota in 1905, and was established by the Regents of the University in the following year.

It offers both a practical and a theoretical training for prospective high school teachers and principals, for principals of elementary schools, for supervisors of special studies, and for superintendents of school systems.

ADMISSION

Entrance examinations are held only at the beginning of the college year. Students prevented from entering at that time may be admitted later if the circumstances justify this action. Such students are, however, at a great disadvantage, and all students expecting to enter the College are urged to be present at the beginning of the year.

All applicants should present themselves to the Registrar, who will furnish them with application blanks and directions for their examinations and registration.

CONDITIONS OF ADMISSION

Students who plan to enter the College of Education are advised to consult with the Dean of that College in regard to their course of study during their first year of college study. When they have completed with credit at least two full years of college work, they will be admitted to this College. During these two years they should have pursued one or more of the subjects which they expect to teach and, in addition, one year in general psychology.

ADMISSION TO ADVANCED STANDING

I. *From Other Colleges*

This College accepts records from all colleges of equal rank for credit to advanced standing. All candidates for graduation must, however, meet the conditions established by this College as indicated in a succeeding paragraph.

II. *From Minnesota Normal Schools*

Graduates of the Advanced Graduate Course (two years beyond the high school) of a Minnesota state normal school who present the individual recommendation of the normal school president will be admitted to the College of Education and will receive sixty credits toward the

Bachelor's degree. Graduates of either of the five-year courses of a Minnesota state normal school will be admitted to the College of Education, on the recommendation of the normal school president, with an allowance of forty-two credits toward graduation. They will be reckoned as unclassified students until they have secured eighteen additional credits.

The program of every student for each semester is subject to the approval of the Dean, and normal school graduates who plan to enter upon university study are expected to consult with him as far as possible in advance of matriculation.

UNCLASSIFIED STUDENTS

Applicants who present satisfactory reasons for not taking the regular course may be admitted as unclassified students upon proof of fitness to profit by the work. The same general attainments are expected of these students as are required of those who enter the regular course. Unclassified students must take the same number of hours as regular students, except that men and women actually engaged in teaching may be allowed to enter for a less amount of work upon the approval of the committee in charge.

EXAMINATIONS

At the close of each semester examinations are held and students are reported as *excellent*, *good*, *passed*, *incomplete*, *conditioned*, or *failed*. An *incomplete* must be removed within one month from the opening of the following semester, or it becomes a *condition*.

A *condition* not made up before the subject is offered again becomes a *failure*, subject to rules governing failures. *Failures* must be pursued again in class. A student who at any time is deficient in more than half a year's work loses his class rank and is regarded as a member of the next lower class. Students whose absences in any term exceed four weeks in the aggregate are not permitted to take the term examinations without special permission of the Faculty.

FAILURE TO KEEP UP WITH THE CLASS

Any student receiving conditions or failures in 60 per cent of the work of the first semester shall be dropped from the rolls and shall not be allowed to re-enter the University until the opening of the following year.

Any student failing to pass in one-half of the work of any year shall not be allowed to register until reinstated by action of the Faculty upon recommendation of the committee in charge.

FEES

All students in the College who are residents of the State are charged an incidental fee of fifteen dollars a semester. This incidental fee includes all laboratory expenses. Non-residents are charged double the fee required of residents of the State, or thirty dollars a semester. No reduction is made for late entrance or for leaving before the end of the semester. A penalty fee of one dollar must be paid by all students who do not register or pay fees within the prescribed time, and, after one week, a fee of twenty-five cents per day for each day's delay will be added. The Registrar will send proper blanks to all students who were in college the previous year, on or before August 20.

In accordance with a regulation of the Board of Regents students of all colleges of the University are required to have a box in the University post-office, for which a rental charge of fifty cents a year is made. Assignment of boxes is made at the time of registration.

A deposit fee of five dollars is required of each student at the beginning of the first semester; against this deposit are charged rental of post-office box and lockers, all penalties for late registration or late payment of fees, and condition examination fees. The unused balance is returned at the end of the year. If, at any time during the year, the charges against a student exceed the amount of the deposit, a second deposit of five dollars will be required.

COURSES OF STUDY

The College of Education offers a two-year course of study leading to the degree of Bachelor of Arts (in Education). The preparation for teaching which is afforded in these two years, in addition to two years of previous collegiate study, is planned to include first of all a thorough grounding in the correct use of English, both spoken and written. No student should propose to go into his work without adequate training of this kind, no matter what subjects he himself expects to teach, and no one will be graduated from the College of Education who has not attained a satisfactory standard in this particular.

A second element in the preparation of the future teacher is found in the courses in general and educational psychology, in the history and the organization of schools, in educational theory, and in the practice of teaching. Courses in psychology and in the history of education should be pursued by all students, and additional courses are elective in the theory and the practice of elementary and secondary teaching, in the history of secondary education, in school organization and law, and in school hygiene.

Another part of the teacher's training is found in the specific subjects which he proposes to teach. In this particular the standard in Minnesota schools is constantly rising, and year by year school trustees are asking of all high school teachers more definite and adequate preparation in the subjects assigned them. This preparation is not possible unless the prospective teacher selects his subjects early in the college course and

effects also a desirable and natural combination. When this is done, the work required for a Bachelor's degree may be arranged to give both a liberal and a special training.

A third year of study leads to the degree of Master of Arts. The work of this year includes advanced studies in education and in philosophy, and in one or more of the subjects of the secondary curriculum at the option of the candidate. The course is planned especially for those holding the degree of Bachelor of Arts who desire to prepare themselves more carefully either for high school teaching or for work as principals and superintendents. Young men and young women who propose to take up this work permanently will find it advisable to do graduate study either immediately upon receiving the Bachelor's degree or after a period of practical experience in teaching.

THE DEGREE OF BACHELOR OF ARTS (IN EDUCATION)

The degree of Bachelor of Arts (in Education) is granted to present candidates on the following conditions:

A. The completion of college courses amounting to one hundred and twenty (120) credits, in addition to the required exercises in drill, gymnasium, and physical culture. The courses selected must be approved by the committee in charge. No student shall elect less than fifteen or more than eighteen hours per week without special permission. A credit is one hour per week through one semester.

B. They must have completed Philosophy 1a or 1b and Courses 1 and 2 or Course 3 in Education with additional work in Education so as to make a total of eighteen (18) credits including those specified in Philosophy.

C. Enough courses shall be taken in at least three departments concerned with the work of the secondary school to secure one major and two minor recommendations. Each minor recommendation will require not less than twelve (12) credits and each major not less than eighteen (18) credits in one department. Only in exceptional cases will the minimum mentioned be accepted. Usually the minor will demand from fifteen to eighteen credits, with a corresponding increase for the major, depending upon the combination which the student has selected with a view to future teaching.

D. Each candidate for graduation must show an average of scholarship through four years of college work indicated by at least as many marks of *good* as of *pass*, and must be counted as *good* by the department which recommends him.

E. A maximum of eighteen credits is elective from the laboratory and shop courses in the Manual Arts and Agriculture, but, in addition, credit is allowed for allied courses toward the bachelor's degree in the case of students who desire to specialize in Manual Training, Domestic Art, Domestic Science, or Agriculture.

The requirements in the number of hours in the major and the minors will be considerably increased for graduation in 1916 and thereafter.

GRADUATION WITH DISTINCTION

The Bachelor's degree with distinction is granted to students of this College on the following conditions:

A. The degree with distinction is based on special excellence in the major subject.

B. Students who wish to be candidates for this degree must register before the beginning of the senior year, and are advised to register upon entering the College.

C. At the time of application the student must have an average of *good* in all of his previous work. (For the purpose of this count one *excellent* shall balance one *pass*.)

D. To receive the degree with distinction the student must meet all the conditions applying to the ordinary degree, must show a record higher than *pass* in four-fifths of all his work, must present a satisfactory thesis upon his major subject by May first of the senior year, must comply with the special requirements of the department chosen, must be recommended to the Faculty for special excellence, and be approved by the vote of the Faculty.

OBSERVATION AND PRACTICE TEACHING

The critical observation of good teaching and the practice of teaching under skilled supervision form a most important part of the preparation of the teacher. In connection with two courses on the practice of elementary and secondary teaching, opportunity was given students during two or three years to observe and to discuss the best methods of teaching employed in the public schools of Minneapolis, St. Paul, and adjacent towns. This plan was adopted as the only feasible substitute at that time for adequate opportunities in the way of observation and of practice. These opportunities, it was recognized from the first, can be furnished only in a school organized under the direct control of this College.

In November, 1907, a small school was installed in temporary quarters provided by the Regents, and during that academic year classes were conducted in seventh grade and in eighth grade work. The school now enrolls pupils from the seventh grade to the twelfth grade inclusive. Its primary purpose is to afford prospective high school teachers an opportunity for seeing the work of the secondary schools conducted under normal conditions in as efficient a way as possible, in order that they may gain by observation and, to some extent, by practice, familiarity with the instruction and management proper to a school of this grade.

The elementary and high school for observation and practice in connection with the training of teachers is the prime condition of success. To organize this adequately means buildings of considerable size, suitable and sufficient furniture and equipment, school libraries, laboratories, shops, gardens, and playgrounds. The first building erected for the use of the College will be completed within a year.

COMMERCIAL TRAINING

No definite course is now prescribed for those who are planning to teach business subjects (including Commercial Geography) in the high schools, but all are advised to take at least a three years' course in Economics and to elect courses also in Political Science and in History. Each student is advised further to select work in Rhetoric, in English Literature, and in one modern foreign language.

Students who expect to teach Commercial Geography will do well to select courses in some of the following subjects: Essentials of Physical Geography, Advanced General Chemistry, Industrial Botany, Economic Zoology, Applied Geology, and Anthropology. In Economics, courses are suggested in Elements of Economics, in Economic Geography, in Industrial and Commercial History, the Principles of Accounting, and the Elements of Business Law. These are general suggestions for those who wish to prepare themselves for the teaching of commercial subjects, but each candidate should very early consult with the committee in regard to the outlining of his entire course.

MANUAL TRAINING

The increasing demand for teachers who are able not only to handle one or two of the ordinary high school subjects, but also to direct the manual training work of the elementary and of the high school grades, is straining the facilities of our training schools for teachers in Minnesota. This College is not yet in a position to provide adequate facilities, but is able to offer at least introductory courses of this kind. Young men who desire to prepare themselves for manual training work may register in the college for courses of this description. By utilizing the shops on the campus and other opportunities here offered, future manual training teachers may prepare themselves both in woodwork and in ironwork. With these, students may also unite courses in Descriptive Geometry, in Mechanical Drawing, and in allied subjects, and in this way they may secure a fairly satisfactory preparation for the teaching of these branches in connection with some of the regular high school studies.

HOME ECONOMICS

Domestic Art and Domestic Science are being added each year to the school course in an increasing number of Minnesota towns. Specially trained candidates for this kind of teaching can be prepared only in a very technical course, but all teachers should have some introductory training in this field.

Students who are interested in this line of work will be directed early in their college course in the selection of foundation work in Economics, Geography, Chemistry, Physics, and other related subjects, and will thus be prepared to elect during the last year or two some of the more technical instruction in Home Economics.

SATURDAY CLASSES AND COLLEGE EXTENSION COURSES

The College has offered during the past years a number of professional courses for those actually engaged in teaching, and most of this work has been organized for Saturdays and for the latter part of the afternoon on other days of the week. Teachers of Minneapolis and of St. Paul have registered in considerable numbers for this work, and teachers have come also from smaller adjacent towns. The courses arranged on the campus of the University for teachers will be continued and increased in number during the coming year.

Extension courses by members of the College Faculty have been given during recent years in Minneapolis and St. Paul. This work has included lectures on Literature, Anthropology, on General and on Educational Psychology, on School Administration, on the History of Education, and on various other subjects. The College plans to make available, through the General Extension Division, as far as possible, its resources in teachers and equipment to all the school systems of Minnesota, particularly those of towns in the neighborhood of the Twin Cities. It will be possible, from time to time, to secure from the College a series of weekly or fortnightly lectures upon almost any of the ordinary branches of higher study.

Correspondence courses have been organized by members of the Faculty in all of the subjects required for the State Professional Certificate and in many branches of the secondary curriculum. A special bulletin of the General Extension Division contains information in regard to these.

THE SUMMER SESSION

In close connection with the work of this College, a Summer Session is conducted by the University for the benefit not only of college students, but of teachers and of other men and women whose occupations prevent their attendance during the academic year. Students who prove their capacity may be allowed to register during the regular semesters for additional work, and by attending the summer courses may complete the credits necessary for the Bachelor's degree in three years. Teachers will be especially interested in the opportunity thus afforded by the University for special preparation along the various lines required by the State Professional Certificate, as well as in the usual subjects of undergraduate and graduate study.

LIBRARY FACILITIES

The professional library of the College contains a large selection of works on the various phases of education, and is at the service not only of the students of the College, but of visiting teachers. During the past year a textbook collection was added covering the field of secondary schools. As soon as possible this illustrative library will be supplemented by model equipment of other kinds, thus offering concrete suggestions on questions of school furnishing and supplies.

Under certain restrictions the use of part of the professional library will presently be made possible for non-resident students.

THE DEGREE OF MASTER OF ARTS

Graduates of the University of Minnesota and of other institutions of equal rank, will be admitted to work leading after one year of study to the degree of Master of Arts, upon the usual conditions attaching to that degree. They will be expected, however, to have given considerable attention in their collegiate work to Psychology and to the History, the Theory, and the Practice of Teaching.

THE UNIVERSITY TEACHER'S CERTIFICATE

The University Teacher's Certificate is granted to all graduates of the College of Education and to those graduates of the College of Science, Literature, and the Arts who complete Philosophy 1a or 1b, and Courses 1 and 2 or Course 3 in Education, with additional work in Education so as to make a total of fifteen credits including those specified in Philosophy and who secure on the basis of excellent scholarship one major recommendation as qualified for teaching from a department of that College concerned with some branch of the secondary curriculum.

SPECIAL LECTURES

In addition to the courses announced for the College of Education, special lectures will be given from time to time, open to all students, by men closely identified with public education in Minnesota. Educational organization, ideals, and methods will be treated from the point of view of those concerned with the State Department of Public Instruction, the inspection of state graded and high schools, the state normal schools, city school systems, and with the conduct of schools in smaller communities.

Public lectures will be given also by men familiar with the educational conditions, experiments, and tendencies in other states.

DEPARTMENTAL STATEMENTS

Courses marked with an asterisk (*), called starred courses, are courses which are open only to juniors, seniors, and graduate students, and which have at least nine prerequisite credits if the department offers work in the freshman year, and at least six prerequisite credits if the department offers no work in the freshman year. It is provided, however, that courses in foreign languages for which there is a prerequisite of five years in secondary school and college, at least one year of which is in college, shall be starred courses.

EDUCATION

GEORGE F. JAMES, Ph.D., Professor, Head of Department of Education	125 Folwell Hall
ALBERT W. RANKIN, B.A., Professor	125 Folwell Hall
FLETCHER H. SWIFT, Ph.D., Professor	300 Folwell Hall
SAMUEL QUIGLEY, M.A., Assistant Professor	319 Folwell Hall
*RAYMOND A. KENT, M.A., Assistant Professor	High School
CHARLES M. HOLT, B.A., Instructor	319 Folwell Hall
ALICE J. MOTT, Ph.D., Instructor	High School
B. F. PITTENGER, M.A., Instructor	300 Folwell Hall

*Absent on leave 1913-14.

1. History of Education to the Reformation

Professor SWIFT and Mr. PITTENGER

Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Philosophy 1a or 1b.

The purpose of the course is to arouse an interest in educational problems, to secure some perspective for use in current investigation, with some command of the facts of educational history, and some ease in the methods of historical study. Education as one phase of civilization and the connection of schools with other social institutions; the schools of Greece and Rome; the education of the early Christian centuries; the development of different types of schools in mediaeval times; the rise of the university and of the humanistic schools of the Renaissance. Lectures, assigned readings, discussions, and reports.

2. History of Modern Education

Professor SWIFT and Mr. PITTENGER

Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Philosophy 1a or 1b.

The development of the various national systems of public instruction; different types of educational theory, in connection with the men who first advanced them, and the schools in which they were first put into effect.

3. Brief History of Education

Professor SWIFT and Mr. PITTENGER

Three credits (three hours per week); each semester. Open to juniors and seniors who have completed Philosophy 1a or 1b.

The origin and development of schools, more particularly in the modern period, as a preparation for the understanding of the educational systems, theories, and practices of the present.

***4. Secondary Education**

Professor JAMES

Three credits (three hours per week); first semester. Open to seniors and graduate students who have completed either Courses 1 and 2, or Course 3.

Secondary education in the United States, with such references to the secondary schools of other countries as will lead to a clearer understanding of the place and function of the high school, its curriculum, the problems of present-day importance, and the relation of the high school to other parts of the system of public instruction. Lectures, reports, and discussions.

***5. Principles and Organization of Elementary Teaching**

Assistant Professor QUIGLEY

Three credits (three hours per week); first semester. Open to seniors and graduate students who have completed either Courses 1 and 2, or Course 3. No credit is given in this course to graduates of normal schools who have received one year's credit at the University.

The course of study of the elementary school and the best methods of instruction. For all students who expect to teach in the high schools or to be principals or superintendents. Lectures, assigned readings, discussions, and reports.

***6. Principles and Organization of Secondary Teaching**

Professor RANKIN

Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have completed either Courses 1 and 2, or Course 3.

Lectures on the general methods of secondary teaching, assigned readings, reports, and discussions. More particularly for those who expect to teach in high schools.

***7. The Theory of Education**

Assistant Professor QUIGLEY

Three credits (three hours per week); first semester. Open to seniors and graduate students who have completed Courses 1 and 2, or Course 3. No credit is given in this course to graduates of normal schools who have received one year's credit at the University.

Educational theory, including a somewhat detailed study of the principles on which is based the present practice in teaching.

***8. School Administration**

Professor RANKIN

Three credits (three hours per week); first semester. Open to seniors and graduate students who have completed Courses 1 and 2, or Course 3.

The organization of school systems; the work of school boards, superintendents, principals, and teachers; school buildings; hygiene. For students without any teaching experience who hope later to do work in supervision. Lectures, reports, and discussions.

***9. School Supervision**

Professor RANKIN

Three credits (three hours per week); second semester. Open to seniors and graduate students who have completed Courses 1 and 2, or Course 3. Intended for students with experience in teaching. Credit will not be given both for Course 8 and for Course 9.

The duties of school principals and superintendents.

***10. Comparative Study of School Systems** Professor JAMES

Three credits (three hours per week); second semester. Open to seniors and graduate students who have completed Courses 1 and 2, or Course 3.

The school systems of Germany, France, England, and the United States, with special reference to principles and methods of administration; elementary, secondary, and higher institutions, with emphasis varying in successive years. Lectures, assigned readings, reports, and discussions.

***11. Philosophy of Education** Assistant Professor QUIGLEY

Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have completed Courses 1 and 2, or Course 3.

Correlation of the various educational ideals drawn from biological and psychological studies, with special consideration of recent social phases of education.

***12. Current Problems in Elementary Teaching** Professor RANKIN

Two credits (two hours per week); first semester. Open to seniors and graduate students who have completed Course 5 and one other course.

A seminar course, involving a general discussion of some current problems in elementary education, one or two of which are worked out practically by the student under the direction of the instructor through readings, the visiting of schools, and through class discussions.

***13. Historical Sources of Education** Professor SWIFT

Two credits (two hours per week); first semester. Open to seniors and graduate students who have completed Courses 1 and 2, or Course 3.

A seminar course for the intensive study of certain source material in the history of education.

***14. Current Problems in Secondary Teaching** Professor RANKIN

Two credits (two hours per week); second semester. Open to seniors and graduate students who have completed one other course in addition to Courses 1 and 2, or Course 3.

A seminar course for advanced students, preferably with teaching experience, who wish to pursue a theoretical and a practical study of some current problems in connection with secondary teaching. Lectures, class discussions, readings, and the visiting of schools.

***15. Selected Periods in Educational History** Professor SWIFT

Two credits (two hours per week); second semester. Open to seniors and graduate students who have completed Courses 1 and 2, or Course 3.

A research course for advanced students devoted to the investigation of some selected periods in the history of education.

***16. School Sanitation** Professor RANKIN

Three credits (three hours per week); first semester. Open to seniors who have completed Courses 1 and 2, or Course 3.

Text, lectures, and investigations into problems of school lighting, heating, ventilation, and other questions of school architecture and management connected with the physical well-being of the pupils.

***17. Organization of Higher Education** Professor JAMES

One credit (one hour per week); second semester. Open to seniors and graduate students who have six credits in the department.

For students who are interested in the general problems of educational administration and who look forward later to college teaching. Historical sketch of the development of the American university, with discussions of modes of organization and administration; problems of departmental teaching; questions of class instruction.

***18. Practice Teaching**

Professor RANKIN and Miss MOTT

Three credits (three hours per week); each semester. Open only to seniors and graduate students. The Registrar will accept enrollment only on written permission to the student from the instructor in charge, specifying one of the morning periods to be kept free for this work on each day of the week; five periods of teaching and Saturday conference; not counted as one of the five courses in Education required for graduation.

A course in observation and practice teaching, related for the present to the work of advanced grammar and first high school grades. As facilities permit, the work of other grades will be added.

19. Technique of Reading

Mr. HOLT

Three credits (three hours per week); each semester. Open only to a limited number of seniors after individual tests by the instructor.

This course is given in two sections for those who are specializing in this work and for those noticeably deficient in voice control.

20. History of Religious Education

Professor SWIFT

One credit (one hour per week); second semester. Open to juniors and seniors.

The development of the religious consciousness; aim, means, and methods of religious instruction among certain types selected from ancient and modern civilizations.

21. Principles of Religious Education

Professor SWIFT

One credit (one hour per week); first semester. Open to juniors and seniors.

Principles of education viewed from the standpoint of their relation and application to religious activities and institutions; the means, methods, and materials of religious instruction.

***22. Classroom Management**

Assistant Professor QUIGLEY

Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have completed Courses 1 and 2, or Course 3.

The daily practical problems of the schoolroom, both in discipline and in instruction. For teachers in high schools and high-school training departments, principals, and superintendents. Observation of school work, with reports and discussions.

***23. Principles and Practice of Industrial Training**

Professor RANKIN

Three credits (three hours per week); second semester. Open to seniors and graduate students who have six credits in the department.

The principles fundamental to vocational training in the public school system, as affecting the arrangement of school years, the course of study, and the methods of teaching. Lectures, assigned readings on topics, and reports on observations of school work.

AGRICULTURE

ASHLEY V. STORM, M.A., Professor of Agricultural Education

204 Main Building, University Farm

Certain courses in the College of Agriculture are elective for students in Education on the approval of the executive committee. Some of the introductory courses in the various departments are mentioned below. Students who desire to combine some agricultural courses with their preparation for positions of school supervision are requested to have a preliminary conference with the Dean of the College of Education.

AGRONOMY

1. Agronomy Assistant Professor ARNY
Three credits (six hours per week); first semester.
2. Farm Machinery Assistant Professor BASSETT
Three credits (six hours per week); first semester.
3. Farm Crops Assistant Professor ARNY
Three credits (six hours per week); first semester. Prerequisites, Botany 1, Agronomy 1.
4. Thremmatology Assistant Professor BULL
Three credits (three hours per week); first semester. Prerequisites, Botany 1, Zoology 1.
7. Farm Management Professor BOSS
Three credits (three hours per week); second semester.
12. Grain and Corn Judging Assistant Professor ARNY
Three credits (three hours per week); second semester.

AGRICULTURAL EDUCATION

4. Organization and Management Professor STORM
Three credits (three hours per week); each semester.
7. Administration of Industrial Subjects Professor STORM
Three credits (three hours per week); second semester. Open to juniors and seniors.

AGRICULTURAL ENGINEERING

9. Farm Structures Assistant Professor BULL
Three credits (six hours per week); first semester.
12. Farm Engineering Professor STEWART
Three credits (six hours per week); second semester.

DAIRY AND ANIMAL HUSBANDRY

2. Poultry Professor A. C. SMITH
Three credits (three hours per week); first semester.
7. Feeding and Management of Market Stock Professor H. R. SMITH
Three credits (three hours per week); second semester.
14. Animal Nutrition Professor HAECKER
Three credits; first semester.
17. Dairy Stock Feeding and Management Associate Professor R. M. WASHBURN
Three credits (three hours per week); second semester.

ANIMAL BIOLOGY

HENRY F. NACHTRIEB, B.S., Professor, Head of Department of Animal Biology	205 Pillsbury Hall
CHARLES P. SIGERFOOS, Ph.D., Professor	201 Pillsbury Hall
HAL DOWNEY, Ph.D., Associate Professor	203 Pillsbury Hall
OSCAR W. OESTLUND, Ph.D., Assistant Professor	220 Pillsbury Hall
CHARLES E. JOHNSON, Ph.D., Instructor	2 Pillsbury Hall
GEORGE D. ALLEN, M.A., Instructor	Pillsbury Hall

GENERAL COURSES

1. General Zoology
Professors SIGERFOOS and NACHTRIEB, Assistant Professor OESTLUND, Mr. ALLEN and ASSISTANTS
Six credits (six hours per week); both semesters. Open to all.
2. Essentials of Histology and Embryology Associate Professor DOWNEY
Six credits (six hours per week); both semesters. Open to those who have completed Course 1.
3. Essentials of Histological and Embryological Technique
Associate Professor DOWNEY
Three credits (six hours per week); second semester. Open to sophomores, juniors, and seniors who have completed Course 1 and the first semester of Course 2.
4. General Physiology Professor NACHTRIEB
Six credits (six hours per week); both semesters. Open to those who have completed Course 1. Both semesters must be completed before credit can be obtained for the first semester.

ADVANCED AND SPECIAL COURSES

5. Comparative Anatomy of Vertebrates Mr. JOHNSON and ASSISTANT
Six credits (six hours per week); both semesters. Open to those who have completed Course 1 or its equivalent. Both semesters must be completed before credit can be obtained for the first semester.
- *6. Embryology of Invertebrates Professor SIGERFOOS
Six credits (six hours per week); both semesters. Open to those who have completed Courses 1 and 2. Both semesters must be completed before credit can be obtained for the first semester.
Reference and laboratory work on the development of invertebrates.
- *7. Embryology of Vertebrates Professor NACHTRIEB
Six credits (six hours per week); both semesters. Open to those who have completed Courses 1, 2, and 3. Both semesters must be completed before credit can be obtained for the first semester.
Reference and laboratory work on the development of vertebrates.

11. Morphology of Invertebrates Professor SIGERFOOS
 Three credits (six hours per week); second semester. Open to those who have completed Course 1.

An intensive study of the Crustacea and some of the smaller phyla of the animal kingdom.

17. Elements of Entomology and Ornithology Assistant Professor OESTLUND and Mr. JOHNSON
 Six credits (six hours per week); both semesters. Open to those who have completed Course 1. Both semesters must be completed before credit can be obtained for the first semester.

With special reference to candidates for the Teacher's Certificate. First semester: The Elements of Entomology, with Assistant Professor Oestlund. Second semester: The Elements of Ornithology, Course 14, with Mr. Johnson.

18. Nature Study Professor SIGERFOOS
 Two credits (four hours per week); first semester. Open to those who have completed a minor in Zoology.

The ends to be attained through courses in General Zoology in the secondary schools and the methods and means by which such ends may be gained; collection of specimens in the field and their preparation and preservation. Lectures, discussions, and reference work.

ADVANCED AND GRADUATE COURSES

- *21. Problems and Research Professor NACHTRIEB and ASSOCIATES
 Six or twelve credits (six or twelve hours per week); both semesters. Open to graduate students and undergraduates who have completed Course 1 or its equivalent and such other courses as may be required by the character of the work.

Advanced and essentially independent work in some specific line carried on under the supervision of the professor in charge of the subject.

- *27. Genetics and Eugenics Professor NACHTRIEB
 Six credits (six hours per week); both semesters. Open to juniors, seniors, and graduate students who have completed Courses 1, 2, and 4.
 Lectures, conference, reference, and laboratory work pertaining to problems of heredity and inheritance.

For a Major, at least eighteen credits, including Courses 1, 17, and 18, are required, together with six credits in Botany.

Students may select additional work, on approval of the Committee, from other courses announced in Animal Biology.

ASTRONOMY

FRANCIS P. LEAVENWORTH, M.A., Professor, Head of Department of
 Astronomy Observatory or 123 Folwell Hall
 WILLIAM O. BEAL, Ph.D., Assistant Astronomer Observatory

- *1. General Astronomy Professor LEAVENWORTH
 Six credits (three hours per week); both semesters. Open to juniors and seniors who have completed Mathematics 4 or 2 (Trigonometry).

A study of the general principles of astronomy illustrated by lantern slides and telescopic observations. This course may be combined with Course 2.

2. Observatory Practice

Mr. BEAL

Three credits (hours arranged); both semesters. Open to those who have completed or are taking Course 1 or 3. Work at the Observatory in connection with Course 1 or 3.

3. Descriptive Astronomy

Professor LEAVENWORTH

Three credits (three hours per week); first semester. Open to sophomores, juniors, and seniors.

Lectures on the elements of astronomy, illustrated by lantern slides. This course may be combined with Course 2.

*4. Practical Astronomy

Professor LEAVENWORTH

Six or twelve credits (three or six hours per week); both semesters. Open to juniors and seniors who have completed Course 1 and Mathematics 7, 8, and 9.

Theory and use of astronomical instruments in determining time, latitude, longitude, positions of heavenly bodies; astronomical photography, with measures of plates; study of the method of least squares.

*5. Advanced Practical Astronomy

Professor LEAVENWORTH

Six credits (three hours per week); both semesters. Open to graduate students who have completed Courses 1 and 4.

*6. Celestial Mechanics

Mr. BEAL

Six credits (three hours per week); both semesters. Open to graduate students who have completed Course 1.

*7. Astrophotography

Professor LEAVENWORTH

Open to graduate students who have completed Courses 1 and 4.

Photography of the heavenly bodies, measurement of plates, determination of positions, parallax, etc.

BOTANY

*FREDERIC E. CLEMENTS, Ph.D., Professor, Head of Department of Botany 205 Pillsbury Hall
 JOSEPHINE E. TILDEN, M.S., Professor 214 Pillsbury Hall
 CARL OTTO ROSENDAHL, Ph.D., Professor 18 Pillsbury Hall
 FREDERIC K. BUTTERS, B.S., B.A., Assistant Professor 206 Pillsbury Hall

NED L. HUFF, M.A., Assistant Professor

214 Pillsbury Hall

HERBERT F. BERGMAN, B.S., Assistant Professor

16 Pillsbury Hall

*Absent on leave 1913-14.

GENERAL COURSES

Required for entrance to any special course, except those in technical botany, 11 to 18 inclusive.

1. General Botany

Assistant Professors BUTTERS, HUFF, and BERGMAN, Messrs. FOLSOM and STALLARD, Miss JENSEN, and Miss LONG

Six credits (six hours per week); both semesters. Open to all; both semesters must be completed before credit is given for the first semester.

2. Advanced Botany

Assistant Professors BUTTERS, HUFF, and BERGMAN, and Mr. FOLSOM

Six credits (six hours per week); both semesters. Open to those who have completed Course 1.

SPECIAL COURSES

*3. Plant Physiology and Ecology

Professor CLEMENTS

Six credits (six hours per week); both semesters. Open to those who have completed Courses 1 and 2; by permission of the department the course may be taken in conjunction with Course 2. Not offered 1913-14.

*4. Algae

Professor TILDEN

Six credits (six hours per week); both semesters. Open to those who have completed Courses 1 and 2.

*5. Fungi

Professor CLEMENTS

Six credits (six hours per week); both semesters. Open to those who have completed Courses 1 and 2. Not offered 1913-14.

*11. Industrial Botany

Professor TILDEN

Six credits (six hours per week); both semesters. Open to technical students who have completed Course 1, and to academic students who have completed Courses 1 and 2.

A study of the origin, distribution, and cultivation of plants yielding products of economic value, the nature and use of these products, and the processes by which they are obtained from the plants. Lectures, demonstrations, topics, and laboratory work.

*12. Plant Foodstuffs and Textiles

Professor TILDEN

Six credits (six hours per week); one or both semesters. Open to technical students who have completed Course 1, and to academic students who have completed Courses 1 and 2.

A study of the botany of foods, textiles, and fabrics, with reference to their source, structure, preparation, adulteration, etc., together with an inquiry into the relation of plants to household processes and problems. Lectures, demonstrations, topics, and laboratory work.

*16. Plant Studies and Methods

Professor CLEMENTS

Six credits (six hours per week); both semesters. Open to those who have completed Courses 1 and 2. Not offered 1913-14.

A course for teachers and for students intending to teach; the subjects of nature study and high-school botany are presented as they are to be taught and not from the university point of view; the material is taken up in detail in its proper sequence, and training in method is afforded as far as possible by practice in the Elementary School of the College of Education.

For a Major, eighteen credits are required, including Courses 1 and 2 and one advanced course covering two semesters, together with six credits in Zoology. Courses 11 and 16 in Botany are recommended.

Students may select additional work, on the approval of the Committee, from other courses announced in Botany.

CHEMISTRY

GEORGE B. FRANKFORTER, Ph.D., Professor, Head of Department of Chemistry.	114 Chemistry Building
CHARLES F. SIDENER, B.S., Professor	203 Chemistry Building
EVERHART P. HARDING, Ph.D., Associate Professor	209 Chemistry Building
EDWARD E. NICHOLSON, M.A., Assistant Professor	104 Chemistry Building
IRA H. DERBY, Ph.D., Assistant Professor	220 Chemistry Building
FRANCIS C. FRARY, Ph.D., Assistant Professor	108 Chemistry Building
WILLIAM H. HUNTER, Ph.D., Assistant Professor	207 Chemistry Building
LILLIAN COHEN, Ph.D., Instructor	106 Chemistry Building

1. General Chemistry Miss COHEN and ASSISTANTS

Six credits (six hours per week); both semesters. Open to all who do not present any entrance credits in Chemistry, but juniors and seniors receive only half credit. Both semesters must be completed before credit is given for the first semester.

Recitation and laboratory work. The common elements and their compounds; introduction to the modern theories of chemistry.

2. Advanced General Chemistry

Professor FRANKFORTER, Miss COHEN, Miss NYE, and ASSISTANTS

Six credits (six hours per week); both semesters. Open to all who have completed a satisfactory entrance course in General Chemistry. Both semesters must be completed before credit is given for the first semester.

Lectures and laboratory work. An introduction to physical and technological chemistry, with an exhaustive study of the chemical elements.

3. Qualitative Analysis

Assistant Professor NICHOLSON, Messrs. BLISS, TEMPLE, and ASSISTANTS

Six credits (six hours per week); both semesters. Open to those who have completed Course 1 or 2.

Lectures and laboratory work, with recitations and collateral reading. The general reactions of the metals and acids, with their qualitative separation; the ionic theory and the law of mass action, with special reference to common qualitative reactions.

*4. Quantitative Analysis Professor SIDENER and Mr. PETTIJOHN

Six credits (six hours per week); both semesters. Open to those who have completed Course 3.

Quantitative methods, with laboratory work in gravimetric analysis, first semester; standard solutions and the necessary stoichiometric calculations with laboratory work in volumetric analysis, second semester.

*5. Organic Chemistry

Professor FRANKFORTER, Assistant Professors DERBY and HUNTER and ASSISTANTS

Six credits (two lectures and six hours of laboratory work per week); both semesters. Open to those who have completed Course 3.

The aliphatic and the aromatic series, with the preparation of the more important compounds.

*6. Theoretical Chemistry

Assistant Professor DERBY

Three credits (one lecture and two recitations per week); second semester. Open to those who have completed Course 5.

The most important theories which co-ordinate and unify chemical and physico-chemical phenomena.

15. Food Analysis

Associate Professor HARDING

Six credits (one lecture or recitation and five hours laboratory work per week); both semesters. Open to those who have completed Course 4.

The chemical analysis of the various food products and detection of common adulterants.

*25. Teachers' Course

Miss COHEN

One credit (two hours per week); second semester. Open to those who have had Course 3.

For those who are interested in the teaching of Chemistry. No regular laboratory work, but certain experiments illustrating the difference between good and poor work.

*26. Household and Sanitary Science

Professor FRANKFORTER and Associate Professor HARDING

Six credits; both semesters. Open to women of the junior and senior classes who have completed Course 1 or 2. To obtain credit, both semesters must be taken.

29a. Photochemistry

Assistant Professor FRARY

Three credits; first semester. Open to those who have completed Course 3.

For a Major, Courses 1 or 2, and 3, Course 4 or Course 5, and Course 25, are required, together with six additional credits in physical science.

Students may select additional work, on the approval of the Committee, from other courses announced in Chemistry.

ECONOMICS

JOHN H. GRAY, Ph.D., Professor, Head of Department of Economics

106 Mechanic Arts Building

EDWARD VAN DYKE ROBINSON, Ph.D., Professor

204 Mechanic Arts Building

E. DANA DURAND, Ph.D., Professor and
Bureau of Statistics

Director of the University
213 Mechanic Arts Building

THOMAS WARNER MITCHELL, Ph.D., Assistant Professor

105 Mechanic Arts Building

J. FRANKLIN EBERSOLE, M.A., Assistant Professor

207 Mechanic Arts Building

LOUIS D. H. WELD, Ph.D., Assistant Professor and Acting Chief of the
Division of Research in Agricultural Economics

INTRODUCTORY COURSES

1. Elements of Economics

Professors GRAY, ROBINSON, and DURAND, Assistant Professors
MITCHELL, EBERSOLE, and WELD.

Three credits (three hours per week); each semester. Open to sophomores, juniors, and seniors.

2a. Economic Development prior to 1763

Professor ROBINSON

Three credits (three hours per week); first semester. Open to sophomores, juniors, and seniors. Alternates with Course 9a.

2b. Physical and Human Geography

Assistant Professor POSEY and Professor ROBINSON

Six credits (three hours per week); both semesters. Open to sophomores, juniors, and seniors who have not taken Geography 29a. Constitutes a unit course for which no credit is allowed until both semesters are completed. May be counted toward a major or minor in either the Department of Geology and Mineralogy or the Department of Economics.

3a. Modern Industrial and Commercial History of Europe

Professor GRAY

Three credits (three hours per week); first semester. Open to sophomores, juniors, and seniors. Given at College of Agriculture in 1913-14.

3b. Industrial and Commercial History of the United States

Professor GRAY

Three credits (three hours per week); second semester. Open to sophomores, juniors, and seniors. Given at College of Agriculture in 1913-14.

Courses 3a and 3b are conducted each with a text-book, supplemented by lectures and prescribed topical readings. In each of these courses, one written report of considerable length required each semester.

4. Advanced Economics

Professor ROBINSON

Three credits (three hours per week); each semester. Open to those who have completed Course 1; *required for a major in Economics and should be taken as soon as possible after Course 1.*

An advanced course in economic theory, devoted chiefly to a study of recent theories of distribution. Assigned readings, reports, and discussions.

5a. Financial History of the United States

Assistant Professor EBERSOLE

Three credits (three hours per week); second semester. Open to sophomores, juniors, and seniors who have completed Course 1. Given in alternate years. Offered in 1913-14.

5b. Principles and Practice of Banking

Assistant Professor EBERSOLE

Three credits (three hours per week); second semester. Open to sophomores, juniors, and seniors who have completed Course 1. Course 5a may profitably accompany Course 5b. (Those who have completed the course in Money and Banking prior to 1912-13 can not receive additional credit for this course.)

*7. Railway Problems

Professor DURAND

Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Courses 1 and 4.

8a. Economic Geography of Foreign Countries

Professor ROBINSON

Three credits (three hours per week); second semester. Open to sophomores, juniors, and seniors who have taken Courses 1, 2a, 2b, or 8c, except those who have admission credit in Commercial Geography. Course 2a may profitably precede or accompany 8a.

15. Business Organization

Assistant Professor MITCHELL

Three credits (three hours per week); second semester. Open to those who have completed Course 1.

16. Principles of Accounting

Assistant Professor MITCHELL

Six credits (three hours per week); both semesters. No prerequisite. Open to sophomores, juniors, and seniors. No credit is given until both semesters are completed.

21a. Elements of Business Law, Part I

Associate Professor YOUNG

For credits and description of course, see Political Science, Course 21a.

21b. Elements of Business Law, Part II

Associate Professor YOUNG

For credits and description of course, see Political Science, Course 21b.

26. Property Insurance

Assistant Professor MITCHELL

Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Course 1.

The basic theory of fire insurance; the historic development of various forms of property insurance, a technical study of an insurance company of each type; critical examination of policy contracts. Lectures and assigned readings.

*27. Theory and Practice of Statistics

Assistant Professor WELD

Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have six credits in Economics.

Statistical method and the work of the statistician; general critical survey of present-day statistical information; correct principles of collection, tabulation, classification, and interpretation of statistical material. A first-hand investigation into some practical problem by the class. Lectures, assigned readings, and work on special problems.

For a Major, in commercial subjects, eighteen credits in Economics are required, together with twelve credits in Political Science and six credits selected from History and Sociology.

Students may select additional work, on the approval of the Committee, from other courses announced in Economics.

ENGLISH

RICHARD BURTON, Ph.D., Professor, Head of Department of English	220 Folwell Hall
FREDERICK KLAEBER, Ph.D., Professor	222 Folwell Hall
*HARDIN CRAIG, Ph.D., Professor	123 Folwell Hall
JOSEPH W. BEACH, Ph.D., Assistant Professor	207 Library Building
OSCAR W. FIRKINS, M.A., Assistant Professor	116 Folwell Hall
GEORGE N. NORTHROP, M.A., Instructor	116 Folwell Hall

*Absent on leave, second semester 1913-14.

1. General Survey of English Literature (Includes the literature produced in the United States)

Professor CRAIG, Assistant Professor BEACH, and Mr. NORTHROP

Six credits (three hours per week); both semesters. Open to sophomores, juniors, and seniors.

Lectures, recitations, and assigned readings. Designed to cover the whole period in historical outline, and to prepare for a more minute study of special periods. Required for a major, minor, and a teacher's certificate. The class will meet in recitation sections once a week.

2. Old English

First Semester, Professor KLAEBER, Assistant Professors FIRKINS and BEACH. Second Semester, Professor KLAEBER

Six credits (three hours per week); both semesters. Open to sophomores, juniors, and seniors. The first semester is required of those who take a major or obtain a teacher's certificate in English.

The language, with reading of representative selections of Old English prose and poetry. The relation to modern English particularly emphasized.

*3. Introduction to Middle English Professor KLAEBER

Two credits (two hours per week); first semester. Open to juniors and seniors who have taken Course 1 and the first semester of Course 2. Alternates with Course 4. Not given in 1913-14.

An outline of Middle English grammar, including the interpretation of selected texts.

*4. *Piers the Plowman* Professor KLAEBER

Two credits (two hours per week); first semester. Open to juniors and seniors who have taken Course 1 and the first semester of Course 2. Alternates with Course 3.

A critical study of *Piers the Plowman*.

***10. English Humorists**

Assistant Professor BEACH

Six credits (three hours per week); both semesters. Open to juniors, seniors, and graduate students who have completed Course 1.

The manifestations of the comic spirit in modern literature, chiefly in England; humor, wit, comedy, and satire, with special reference to their use in a criticism of life and with extended illustrations from the dramatists, novelists, essayists, and poets.

***11. Seventeenth Century Prose**

Mr. NORTHROP

Six credits (three hours per week); both semesters. Open to juniors and seniors who have completed one year in English. Course 2 in History is a desirable prerequisite.

First semester: General survey of the prose of the century to 1660.

Second semester: Literature of the Restoration, with particular study of Dryden.

***12. Outline of Nineteenth Century Literature**

Mr. NORTHROP

Three credits (three hours per week); first semester. Open to juniors and seniors who have completed one year of work in English.

The main features of Victorian literature, with particular emphasis upon the poetry of Arnold and the prose of Carlyle.

***13. The Drama: Structure and Evolution**

Assistant Professor FIRKINS

Six credits (three hours per week); both semesters. Open to seniors who have completed two years of work in English, and to graduate students.

First semester: Theory of the drama, and history up to the nineteenth century.

Second semester: Recent drama, continental, English. Open only to those who have completed first semester.

***14. English Idiom**

Professor BURTON

Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have completed one year of work in English.

A discussion of current idiom with the purpose of relating it to the underlying principles of historic development.

***15. Browning and Tennyson**

Professor BURTON

Three credits (three hours per week); second semester. Open to juniors and seniors who have completed one year of work in English.

This course involves a reading of the representative work of the two major poets of the Victorian era, in order to show their quality and contrasted power.

***16. The English Novel**

Professor BURTON

Three credits (three hours per week); first semester. Open to juniors and seniors who have completed one year of work in English.

Principles and personalities in the evolution of the English novel. Written reports required on selected novels.

***17. The Bible as Literature**

Professor BURTON

Three credits (three hours per week); second semester. Open to graduate students who have taken an undergraduate major in English and to juniors and seniors who have completed Course 1.

A literary study of the Old Testament with special attention to forms and the critical study of selected readings.

18. History of the English Language Professor KLAEBER

One credit (one hour per week); second semester. Open to juniors and seniors who have completed the first semester of Course 2. Required of all who take their major or obtain a teacher's certificate in English.

*19. Principles of Literary Criticism Assistant Professor FIRKINS

Six credits (three hours per week); both semesters. Open upon approval of the instructor to juniors, seniors, and graduate students who have completed Course 1.

A brief treatment of elements or forces in literature, e. g., clearness, vigor, beauty, precision, art, taste, humor, ethics, truth, and the like; an exposition of literary types, e. g., the lyric, epic, drama, short story, novel, biography, etc., in relation to the standards and methods of judging each.

*20. American Literature Professor CRAIG

Three credits (three hours per week); first semester. Open in alternate years to juniors and seniors who have completed one year of English study and to graduate students.

Lectures on American literature, with extensive readings from the principal poets and prose writers of this country.

*21. Moral Forces in English Literature Assistant Professor BEACH

Three credits (three hours per week); second semester. Open to juniors and seniors who have completed one year of work in English. Not offered in 1913-14.

The moral forces in modern English literature, as seen in individual authors and in literary movements and tendencies, especially in the eighteenth and nineteenth centuries.

*22. Elizabethan Literature Professor CRAIG

Three credits (three hours per week); second semester. Open in alternate years to juniors and seniors who have completed Course 1. Not offered in 1913-14.

A study of Elizabethan authors exclusive of Shakespeare.

*23a. The Modern Drama, English-Speaking Professor BURTON

Three credits (three hours per week); first semester. Open to seniors who have taken Course 1.

*23b. The Modern Drama, European Professor BURTON

Three credits (three hours per week); second semester. Open to seniors who have completed Course 1.

Contemporary drama from 1870 to the present; the new impulse in dramatic literature under the stimulus of latter-day thought.

*31. Seminar in George Meredith Assistant Professor BEACH

Two credits (one hour per week); both semesters. Open to seniors and graduate students who have completed Course 1.

Meredith's personality, literary method, and philosophy of life, as seen chiefly in his novels and poems.

*32. The Drama in England before Shakespeare Professor CRAIG

Both semesters. Open to graduate students who have taken an undergraduate major in English; other arrangements may be ascertained upon application to the department.

The various forms of the early drama; sources and texts of mediaeval plays, mediaeval players, the stage, and the function of the early drama.

*33. Anglo-Saxon

Professor KLAEBER

First semester. Open to graduate students who have taken an undergraduate major in English or modern language. Other arrangements may be ascertained upon application to the department.

*34. Beowulf

Professor KLAEBER

Second semester. Open to graduate students who have taken an undergraduate major in English or modern language. Other arrangements may be ascertained upon application to the department.

*35. The Drama as a Literary Form

Professor BURTON

Four credits (two hours per week); both semesters. Open to graduate students who have had an undergraduate major in English.

The modern psychological drama. A study of representative English and foreign playwrights, whose work is typical and important because of its psychological bearings.

*37. The Metaphysical Poets

Mr. NORTHROP

Two credits (two hours per week); first semester. Open to graduate students who have taken an undergraduate major in English. Given in 1914-15 and in alternate years following.

The religious poetry of the early Stuart period, with particular attention to Crashaw, Donne, and Herbert.

*38. Political Prose of the Protectorate

Mr. NORTHROP

Two credits (two hours per week); second semester. Open to graduate students who have had an undergraduate major in English. Given in 1914-15 and alternate years following.

Intensive study of Clarendon and of the letters of this period. Students entering this course are strongly urged to take the correlative course in English History, History 19b.

*39. Biography

Mr. NORTHROP

Two credits (two hours per week); first semester. Open to graduate students who have completed an undergraduate major in English and, upon approval of the instructor, to seniors who have twelve credits in the department. Given in 1913-14 and in alternate years following.

A study of important English biographies, with attention to notable journals, memoirs, and letters.

For a Major, eighteen credits, including Course 1, the first semester of Course 2, Course 5, 7a, and 18, together with twelve credits in Rhetoric are required.

Students may select additional work, on the approval of the Committee from other courses announced in English.

GEOLOGY AND MINERALOGY

WILLIAM H. EMMONS, Ph.D., Professor, Head of the Department of
Geology and Mineralogy 108 Pillsbury Hall

EDWARD M. LEHNERTS, M.A., Assistant Professor, General Extension Division

*FREDERICK W. SARDESON, Ph.D., Assistant Professor	103 Pillsbury Hall
FRANK F. GROUT, M.S., Assistant Professor	102 Pillsbury Hall
CHESSLEY J. POSEY, M.S., Assistant Professor	103 Pillsbury Hall
OLIVER BOWLES, M.A., Instructor	102 Pillsbury Hall
EDGAR K. SOPER, B.A., Instructor	112 Pillsbury Hall
A. WOLFRED JOHNSTON, M.A., Instructor	112 Pillsbury Hall

*On leave of absence 1913-14.

GEOLOGY

- 1a. General Geology Mr. JOHNSTON
Three credits (three hours per week); each semester. Open to sophomores and juniors. The class is divided into three sections. High school or college Chemistry is a desirable antecedent.
- 1b. General Geology Professor EMMONS
Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Chemistry 1 or 2.
- 1c. Laboratory Work Mr. JOHNSTON and ASSISTANTS
One credit (two hours per week); each semester. Open to students taking Course 1a or 1b.
2. Geography and Geology of Minnesota Mr. JOHNSTON
Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Course 1a or 1b.

MINERALOGY

18. Elements of Mineralogy Assistant Professor GROUT and Mr. BOWLES
Three credits (six hours per week); first semester. Open to sophomores, juniors, and seniors who have taken high school Chemistry or to those taking college Chemistry.
19. Descriptive Mineralogy Assistant Professor GROUT and Mr. BOWLES
Three credits (six hours per week); second semester. Open to sophomores, juniors, and seniors who have completed Course 18.
- *20. Physical Mineralogy Mr. BOWLES
Three credits (two lectures and two laboratory hours per week); first semester. Open to those who have completed Course 19.
The form and optical properties of minerals; other physical properties in greater detail than in Course 18; thermal properties, as coefficient of expansion and conductivity; pyroelectricity; cohesion as hardness, percussion, and etch figures; cleavage and gliding planes.

GEOGRAPHY

29a. General Physiography

Assistant Professor POSEY

Three credits (three hours per week); first semester. Open to juniors and seniors.

The principles of earth sculpture; structural features of the continents; hydrography and oceanography; planetary relations; climatology; the evolution, uses, and effects of the materials and physical features of the earth.

29b. Physical and Human Geography

Assistant Professor POSEY and Professor ROBINSON

Six credits (three hours per week); both semesters. Open to sophomores and juniors who have not taken Course 29a. Constitutes a unit course for which no credit is allowed until both semesters are completed. May be counted toward a major or a minor in either the Department of Geology and Mineralogy or the Department of Economics.

33. The Western Hemisphere

Assistant Professor LEHNERTS

Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Course 29a or 29b.

Regional geography of the continents and countries of the Western Hemisphere. Lectures, maps, and library work.

*34. Problems in Geography

Assistant Professor LEHNERTS

Three credits (three hours per week); first semester. Open to seniors who have completed Course 33.

The effects of coast lines and harbors, navigable rivers, water powers, mountains and plains, rock formations, and soils; ground and surface waters for municipal and farm supplies; the utilization and conservation of natural resources. A series of special problems in geography.

36. The Method and Material of Geography

Assistant Professor POSEY

Two credits (one hour per week); both semesters. Open to juniors and seniors who have completed Course 29a; especially designed for teachers.

Guiding principles; the course of study; text-books and their use; practical laboratory work; excursions; collection and preparation of illustrative materials; map drawing, chalk modeling, and relief work; organization of geographical subject matter for classroom instruction; the method of the recitation.

37. Field and Laboratory Practice

Assistant Professor POSEY

Two credits (one hour per week); both semesters. Open to juniors and seniors who have completed Course 29a; designed especially for teachers.

38. Field Work in Geography

Assistant Professor LEHNERTS

Six credits; summer session. Open to juniors and seniors and graduate students who have completed Course 1a or 29a.

A six weeks' course given during the summer months. Systematic study in the field, of the physical and industrial geography of selected areas in one or more western states. Arrangements may be ascertained upon application to the department.

39. Research Course in Geography Assistant Professor LEHNERTS
Six credits (three hours per week); both semesters. Open to graduate students who have completed a major in Geography.

Principles and problems in the several fields of geography, mathematical, physical, industrial, and regional. Students will be required to do semi-independent work on selected subjects and problems.

For a Major, at least eighteen credits, Courses 1a or 1b, 2, 29a or 29b, 33, and 36 are recommended.

Students may select additional work, on the approval of the Committee, from other courses announced in Geology and Mineralogy.

GERMAN

JOHN G. MOORE, B.A., Professor, Head of Department of German	210 Folwell Hall
CARL SCHLENKER, B.A., Professor	211 Folwell Hall
OSCAR C. BURKHARD, M.A., Assistant Professor	214 Folwell Hall
JAMES DAVIES, Ph.D., Instructor	211 Folwell Hall
THEOPHILUS H. SCHROEDEL, B.A., Instructor	215 Folwell Hall
RICHARD WISCHKAEMPER, M.A., Instructor	216 Folwell Hall
ALFRED E. KOENIG, M.A., Instructor	216 Folwell Hall
J. THEODORE GEISSENDOERFER, Ph.D., Instructor	216 Folwell Hall
LEON METZINGER, Ph.B., Instructor	215 Folwell Hall

- *8. Advanced Conversation, Grammar, and Composition

Professor SCHLENKER, Assistant Professor BURKHARD, Messrs. SCHROEDEL, KOENIG, and GEISSENDOERFER

Four credits (two hours per week); both semesters. Open to those who are taking or have taken Course 6, 7, or 9; recommended that it be preceded by Course 5; required of those who desire a teacher's recommendation in German; intended as a preparation for Course 11. Both semesters must be completed before credit is given for the first semester.

- *9. German Literature of the Classic Period

Professor MOORE and Assistant Professor BURKHARD

Six credits (three hours per week); both semesters. Open to those who have completed Course 2 (by special permission) or 6 or 7; required of those who desire a teacher's recommendation in German.

- *10. Modern Authors

Professors MOORE and SCHLENKER

Six credits (three hours per week); both semesters. Open to those who are taking or have completed Course 9; required of those who desire a teacher's recommendation in German.

- *11. Teachers' Course

Professor MOORE

One credit (one hour per week); second semester. Open to juniors and seniors who have completed Course 9; especially designed for students who expect to become teachers of German in high schools.

*13a. Middle High German

Professor SCHLENKER and Mr. SCHROEDEL

Four credits (two hours per week); both semesters. Open to seniors and graduate students who have completed Course 9. Both semesters must be completed before credit is given for the first semester.

*13b. The Age of Frederic the Great

Professor SCHLENKER

Four credits (two hours per week); both semesters. Open to graduate students and seniors who have completed Course 9. Both semesters must be completed before credit is given for the first semester. Given alternate years with Course 13a. Offered in 1913-14.

*17b. German Lyric Poetry of the Seventeenth and Eighteenth Centuries

Mr. DAVIES

Four credits (two hours per week); both semesters. Open to graduate students and seniors who have completed Course 9. Both semesters must be completed before credit is given for the first semester.

Courses conducted in German. Special attention given to literary schools and movements.

*18b. Goethe, The Man and his Work

Mr. WISCHKAEMPER

Four credits (two hours per week); both semesters. Open to graduate students and seniors who have completed Course 9. Both semesters must be completed before credit is given for the first semester. Course conducted in German.

*19. The Development of the German Novel from its Origin to the Classic Period

Mr. GEISSENDOERFER

Four credits (two hours per week); both semesters. Open to graduate students and seniors who have completed Course 9. Both semesters must be completed before credit is given for the first semester.

For a Major, Course 2 or Course 4, Course 6 or Course 7, and Courses 8, 9, 10, 11 are required.

Students may select additional work, on the approval of the Committee, from other courses announced in German.

GREEK

JOHN CORRIN HUTCHINSON, B.A., Professor, Head of Department of Greek

112 Folwell Hall

CHARLES ALBERT SAVAGE, Ph.D., Professor

112 Folwell Hall

4. Dramatic Poetry: Euripides' *Alcestis*

Professor SAVAGE

Three credits (three hours per week); first semester. Open to those who have completed Course 2 or 3.

Special attention given to metre, literary style, and mythology.

*5. Philosophy: Plato's *Apology*, and selections

Professor HUTCHINSON

Three credits (three hours per week); first semester. Open to those who have completed Course 2, or 3 and 4.

The reading of Plato's *Apology*, together with selections from the *Crito* and the *Phaedo*.

- *6. Oratory: Lysias and Demosthenes Professor SAVAGE

Three credits (three hours per week); second semester. Open to those who have completed Course 2, or 3 and 4.

Readings from the orations of Lysias and Demosthenes; selections from Isocrates; lectures on Greek oratory.

- *7. Lyrics Professor HUTCHINSON

Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Course 5 or 6.

Selections from the elegiac, iambic, lyric, and bucolic poets.

- *8. Tragedy: Aeschylus or Sophocles Professor SAVAGE

Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Course 5 or 7.

The reading of the text is supplemented by intensive study of the play read, with special reference to literary form and dramatic representation.

- *9. Philosophy (Advanced): Plato's *Republic* Professor HUTCHINSON

Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have completed Course 5. Alternates with Course 10. Not offered in 1913-14.

- *10. Oratory (Advanced): Demosthenes' *De Corona* Professor SAVAGE

Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have completed Course 6. Alternates with Course 9.

A careful study of the development of oratorical style among the Greeks, and its culmination in this acknowledged masterpiece.

- *11. Epic Poetry (Advanced): The *Iliad* Professor HUTCHINSON

Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have completed Courses 5 and 6, or 7.

The object of this course is to secure as intimate an acquaintance as possible, at first hand, with Homer. The *Iliad* and *Odyssey* are offered in alternate years.

- *12. Greek Composition Professor HUTCHINSON

Two credits (one hour per week); both semesters. Open to juniors and seniors who have completed Courses 5 and 6. Both semesters must be completed before credit is given for the first semester. Recommended to those who expect to teach Greek.

A systematic review of Greek syntax and the retranslation into Greek of passages translated from various classic authors, illustrative of various styles.

COURSES NOT REQUIRING A KNOWLEDGE OF GREEK

The following courses are particularly desirable for students whose majors are in Language, History, or Philosophy, and for students in Art. The object in general is to make the student acquainted with those characteristics of the Greeks which make them the permanent teachers of the world.

16. Archaeology of Greek Art Professor HUTCHINSON
 (a) Architecture. One credit (one hour per week); first semester.
 (b) Sculpture. One credit (one hour per week); second semester.
 (c) Vases. One credit (one hour per week); first semester.
 (d) Gems and coins. One credit (one hour per week); second semester.

Open to juniors and seniors. 16(a) and 16(b) will be offered in 1913-14.

Each semester's work is credited independently of the rest. Not more than two credits can be obtained in this course.

17. Greek Literature and Life Professor SAVAGE
 Two credits (two hours per week); second semester. Open to juniors and seniors.

Lectures, text-book work, and illustrative readings; special lectures illustrated by stereopticon views. Recommended to those who intend to teach Greek, Latin, English, or Ancient History.

18. Greek Mythology Professor SAVAGE
 One or two credits (one hour per week); both semesters. Open to seniors and juniors.

Lectures, text-book work, and assigned readings, supplemented by occasional stereopticon illustrations. Recommended to those who are specializing in Languages or Philosophy.

For a Major, Courses 4, 5, 7, 10, and 13 are required.

Students may select additional work, on the approval of the Committee, from other courses announced in Greek.

HISTORY

GUY STANTON FORD, Ph.D., Professor, Chairman of Department of History	204 Library Building
FRANK MALOY ANDERSON, M.A., Professor	219 Library Building
ALBERT BEEBE WHITE, Ph.D., Professor	110 Library Building
WILLIAM STEARNS DAVIS, Ph.D., Professor	109 Library Building
WALLACE NOTESTEIN, Ph.D., Assistant Professor	109 Library Building
AUGUST CHARLES KREY, M.A., Instructor	220 Library Building

1. Mediaeval and Modern History Mr. KREY
 Six credits (three hours per week); both semesters. Open to freshmen and sophomores. Designed especially for freshmen who offer less than two years of preparatory work in History for admission.

The growth of France, Germany, and Italy from 800 A. D. to the French Revolution, with reference also to social and economic conditions, and to the Mediaeval Church.

8. American Political History, 1492-1912 Professor ANDERSON
 Six credits (three hours per week); both semesters. Open to freshmen who have not presented Senior American History for admission.

Designed (like Course 1) for freshmen who offer less than two years of preparatory History; and not recommended to students who expect to take more than two years of college history. Not offered in 1913-14.

Brief survey of the colonial and most recent periods, with fuller treatment for the years 1789-1865. Special attention to political parties, territorial expansion, slavery, and the Civil War.

2. English History to 1783

Professor WHITE and Assistant Professor NOTESTEIN

Six credits (three hours per week); both semesters. Open to all who present two years of preparatory History for admission (American Government included in that amount, if desired), or to those who have completed Course 1 or 8.

The general political history of England from the earliest times to the close of the American Revolution, with special reference to the development of governmental institutions.

GENERAL COURSES

3. The Renaissance and Reformation

Professor WHITE

Three credits (three hours per week); second semester. Open to sophomores, juniors, and seniors who have six credits in History.

The Renaissance and Reformation as general European movements, with especial emphasis upon the work of individual men and upon ideas rather than upon politics and institutions; how the mediaeval world became the modern world.

*4a. The French Revolution and the Napoleonic Period

Professor FORD

Three credits (three hours per week); first semester. Open to juniors and seniors who have taken nine credits in History.

French conditions in the eighteenth century before 1774; the events between 1774 and 1789 which precipitated the revolution in France; the reform work of the early revolution; the Napoleonic régime in France and Europe.

*4b. Europe in the Nineteenth Century

Professor FORD

Three credits (three hours per week); second semester. Open to juniors and seniors who have nine credits in History.

The national movements of the nineteenth century and those European conditions which form the basis of modern world politics.

5. American History, 1760-1865

Professor ANDERSON

Six credits (three hours per week); both semesters. Open to sophomores, juniors, and seniors who have six credits in History; recommended for the sophomore year.

*15. American History, 1865-1912

Professor ANDERSON

Three credits (three hours per week); first semester. Open to juniors and seniors who have nine credits in History.

Special attention will be given to the reconstruction period and to the history of the presidential elections.

16. The Teaching of History

Mr. KREY

Three credits (three hours per week); second semester. Open to seniors and graduate students who have, including courses in progress, twenty-one credits in History. Mr. Krey will be aided by other members of the department.

Deals chiefly with the practical problems of teaching history in the secondary schools

*21. History of Greece

Professor DAVIS

Six credits (three hours per week); both semesters. Open to juniors and seniors who have nine credits in History and who have not taken a course in Greek History. Alternates with Course 22.

The political and social development of the Greek states to the time of their incorporation into the Roman Empire, with special attention to the permanent influence of Greek civilization.

*22. Selected Topics in Greek History

Professor DAVIS

Three credits (three hours per week); second semester. Open to juniors and seniors eligible for Course 21, but desiring a shorter course. Alternates with Course 21. Not offered in 1913-14.

*23. Selected Topics in Roman History

Professor DAVIS

Three credits (three hours per week); second semester. Open to students eligible for Course 24, but desiring a shorter course. To alternate with Course 24.

*24. History of Rome

Professor DAVIS

Six credits (three hours per week); both semesters. Open to juniors and seniors who have nine credits in History. Alternates with Course 23. Not offered in 1913-14.

Social and political development, with considerable attention to cultural subjects.

*25. History of the Old Orient

Professor DAVIS

Three credits (three hours per week); second semester. Open to juniors and seniors who have nine credits in History.

The origins of the Egyptians, Babylonians, Assyrians, and Persians, and the main features of their political history and civilization. The history of the Hebrews discussed so far as it bears upon general Oriental problems.

ADVANCED OR INTENSIVE COURSES

*7. The Making of the Constitution

Professor ANDERSON

Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have twelve credits in History.

*9. Studies in American Statesmen

Professor ANDERSON

Three credits (three hours per week); second semester. Open to graduate students who have twelve credits in History.

*10. A Critical Study of an Historical Masterpiece Professor ANDERSON
Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have twelve credits in History. Not offered in 1913-14.

*11. The History of American Diplomacy Professor ANDERSON
Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have twelve credits in History.

*17. The Beginning of Parliament Professor WHITE
Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have completed twelve credits in History, including Course 2, and who obtain the permission of the instructor. Students should have a knowledge of at least high school Latin. Alternates with Course 18.

*19. Cromwellian England Assistant Professor NOTESTEIN
Six credits (three hours per week); both semesters. Open to graduate students who have twelve credits in History, including Course 2. (English 11 is strongly recommended as a desirable reinforcing subject.) Given in two sub-courses which may be taken independently one of the other.

*27. German History Professor FORD
Six credits (three hours per week); both semesters. Open to graduate students and, with the consent of the instructor, to qualified seniors who have twelve credits in History.

A general survey with special reference to the rise of Brandenburg-Prussia since 1640.

*28. The Administration of the Roman Empire Professor DAVIS
Six credits (three hours per week); both semesters. Open to graduate students who have twelve credits in History. The use of French, German, and Latin is expected.

*29. Historical Bibliography and Criticism Professor FORD
Two credits (one hour per week); both semesters. Open to graduate students who have twelve credits in History; required of all candidates for advanced degrees in History who do not present evidence of similar training elsewhere. Professor Ford will be aided by the other members of the department.

Selected problems in various fields.

For a Major, twenty-four credits, including Course 4 or Course 5, Course 16, and at least six credits in intensive courses, are required. At least the elements of the other social sciences are recommended.

Students may select additional work, on the approval of the Committee, from other courses announced in History.

Students who expect to teach history are advised to consult in respect to their courses with the head of the department during the freshman year.

HOME ECONOMICS

JOSEPHINE T. BERRY, M.A., Professor of Nutrition

Certain courses in Home Economics in the College of Agriculture are elective by students in Education who desire to combine some of this kind of training with their general preparation as public school teachers. Other courses may be made available by the Executive Committee on individual application. Students are advised in each case before making their program to consult with the Dean of the College of Education.

2. Sewing and Garment-making

Three credits (six hours per week); each semester.

3. Dressmaking

Three credits (six hours per week); each semester.

21. Foods and Cookery

Assistant Professor McDANELL and Miss WILLIAMS

Three credits (six hours per week); first semester.

22. Food Economics

Three credits (six hours per week); second semester.

41. Nutrition I

Professor BERRY

Five credits (ten hours per week); first semester.

42. Nutrition II

Professor BERRY

Five credits (ten hours per week); second semester.

LATIN

JOSEPH B. PIKE, M.A., Professor, Head of Department of Latin

118 Folwell Hall

*JOHN S. CLARK, B.A., Professor

111 Folwell Hall

JOHN E. GRANRUD, Ph.D., Professor

126 Folwell Hall

*Died September 5, 1913.

*6. Advanced Course in Caesar

Professor PIKE

Three credits (three hours per week); first semester. Open to those who have completed Courses 1 to 4 inclusive; required for a teacher's recommendation in Latin.

Selections from books five to seven of the Gallic War and from the Civil War; the principles of indirect discourse; intermediate Latin composition; class drill work and discussion of various problems connected with secondary school work in Latin.

*7. Advanced Course in Virgil

Professor PIKE

Three credits (three hours per week); second semester. Open to those who have completed Courses 1 to 4 inclusive; required for a teacher's recommendation in Latin.

An interpretation of selections from books seven to twelve of the *Aeneid*; the quantitative method of pronouncing Latin verse; the metrical rendering of selected passages.

- *10. Latin Composition Professor PIKE
Two credits (two hours per week); second semester. Open to those who have completed Courses 1 to 4 inclusive; required for degree with distinction.
Advanced Latin composition and Latin prose style.
- *11. Roman Elegiac Poetry Professor CLARK
Three credits (three hours per week); first semester. Open to those who have completed Courses 1 to 4 inclusive. Courses 11 and 12 are offered in alternate years. Course 11 is offered for 1913-14.
Selections from Catullus, Tibullus, Propertius, and Ovid, the rise, development, and characteristics of Roman elegiac poetry.
- *12. Correspondence of Cicero Professor CLARK
Three credits (three hours per week); first semester. Open to those who have completed Courses 1 to 4 inclusive.
Selections from the letters of Cicero; of his life and the history of his times.
- *14a. Roman Drama Professor CLARK
Three credits (three hours per week); second semester. Open to those who have completed Courses 1 to 4 inclusive. Courses 14a and 14b are offered in alternate years. Course 14a is offered for 1914-15.
Selections from Seneca's tragedies and from the comedies of Plautus and Terence; the rise and development of the drama at Rome.
- 14b. Roman Law Professor CLARK
Three credits (three hours per week); second semester. Open to those who have completed Courses 1 to 4 inclusive.
Translations of the text of the *Institutes of Justinian* and of Robinson's *Selections*; the sources and development of Roman law and Roman private law.
15. Roman Architecture and Life Professor GRANRUD
One credit (one hour per week); first semester. Open to juniors and seniors; no knowledge of Latin required.
Rome and the Campagna, the forum, temples, theatres, amphitheatres, circuses, thermae, arches, and tombs. Lectures illustrated by slides. Not credited toward a major or minor, but as a reinforcing subject.
16. Roman Art Professor GRANRUD
One credit (one hour per week); second semester. Open to juniors and seniors; no knowledge of Latin is required.
Roman and Pompeian sculpture, wall decoration, painting, and minor arts; characteristics of Roman art. Not credited toward a major or minor, but as a reinforcing subject.
- *17. Lucretius Professor CLARK
Six credits (three hours per week); both semesters. Open to graduate students; other arrangements may be ascertained upon application to the department.
The reading and interpretation of the text of Lucretius, his philosophy and its sources.

***18. Tacitus**

Professor PIKE

Six credits (three hours per week); both semesters. Open to graduate students; other arrangements may be ascertained upon application to the department.

The Annals of Tacitus and study of the reign of one of the emperors, Tiberius Claudius or Nero.

For a Major, Courses 1, 2, 3, 4, 6, and 7, are required.

Students may select additional work, on the approval of the Committee, from other courses announced in Latin.

MANUAL TRAINING

JOHN J. FLATHER, Ph.B., M.M.E., Professor, Head of Department of Mechanical Engineering 105 Mechanical Engineering Building

S. CARL SHIPLEY, B.S., M.E., Assistant Professor of Machine Construction 100 Mechanical Engineering Building

WILLIAM H. RICHARDS, Instructor in Carpentry and Pattern Making 207 Mechanical Engineering Building

EDWARD P. QUIGLEY, Instructor in Forge Work 111 Mechanical Engineering Building

PETER PETERSON, Instructor in Foundry Practice 112 Mechanical Engineering Building

Each credit hour calls in all Manual Training courses for at least two hours of shop work.

1. Introductory Course in Woodwork Mr. RICHARDS

Three credits (six hours per week); first semester. Open to juniors and seniors.

Designed to give the elementary principles of sloyd and to develop familiarity with tools and materials.

2. Advanced Course in Woodwork Mr. RICHARDS

Three credits (six hours per week); each semester. Open to juniors and seniors.

3. Blacksmithing Mr. QUIGLEY

Three credits (six hours per week); each semester. Open to juniors and seniors.

4. Foundry Practice Mr. PETERSON

Three credits (six hours per week); each semester. Open to juniors and seniors.

5. Introductory Course in Machine Work

Assistant Professor SHIPLEY

Three credits (six hours per week); each semester. Open to juniors and seniors.

6. Advanced Course in Machine Work Assistant Professor SHIPLEY
Three credits (six hours per week); each semester. Open to juniors and seniors.

Students may register for credit in Manual Training Courses only with the approval of the Committee.

MATHEMATICS

JOHN F. DOWNEY, M.A., C.E., Professor, Head of Department of Mathematics	120 Folwell Hall
GEORGE N. BAUER, Ph.D., Professor	100 Folwell Hall
WILLIAM H. BUSSEY, Ph.D., Assistant Professor	122 Folwell Hall
ANTHONY LISPENARD UNDERHILL, Ph.D., Assistant Professor	121 Folwell Hall
ROYAL R. SHUMWAY, B.A., Assistant Professor	122 Folwell Hall
HERMON L. SLOBIN, Ph.D., Instructor	121 Folwell Hall
*JAMES S. MIKESH, B.A., Instructor	123 Folwell Hall
LINCOLN K. ADKINS, M.S., Instructor	123 Folwell Hall
WALTER E. ANDERSON, M.A., Instructor	123 Folwell Hall

*Absent on leave 1913-14.

- Higher Algebra, Part I
Assistant Professors UNDERHILL and SHUMWAY, Messrs. SLOBIN, ADKINS, and ANDERSON
Five credits (five hours per week); first semester.
- Algebra Continued and Plane Trigonometry
Assistant Professors UNDERHILL and SHUMWAY, Messrs. SLOBIN, ADKINS, and ANDERSON
Five credits (five hours per week); each semester.
- Higher Algebra, Part II
Professor BAUER, Assistant Professors BUSSEY, UNDERHILL, and SHUMWAY, Messrs. SLOBIN, ADKINS, and ANDERSON
Three credits (three hours per week); first semester.
- Logarithms and Trigonometry
Professor BAUER, Assistant Professors BUSSEY, UNDERHILL, and SHUMWAY, Messrs. SLOBIN, ADKINS, and ANDERSON
Three credits (three hours per week); second semester. Open to those who have completed Course 3.
Text, tables, and numerous problems.
- Plane and Solid Analytical Geometry
Professor BAUER, Assistant Professors BUSSEY, UNDERHILL, and SHUMWAY, and Mr. SLOBIN
Five credits (five hours per week); each semester. Open to those who have completed Course 2 or 4 and have not taken Course 7.

7. Analytical Geometry

Professor BAUER, Assistant Professors BUSSEY and SHUMWAY,
and Mr. SLOBIN

Three credits (three hours per week); first semester. Open to those who have completed Course 2 or 4 and have not taken Course 6.

8. Differential Calculus

Professors DOWNEY and BAUER, Assistant Professors BUSSEY,
UNDERHILL, and SHUMWAY, and Mr. SLOBIN

Three credits (three hours per week); each semester. Open to those who have completed Course 6 or 7.

*9. Integral Calculus

Professor DOWNEY

Three credits (three hours per week); each semester. Open to those who have completed Course 8.

*10. Advanced Course in Plane Analytical Geometry

Assistant Professor BUSSEY

Three credits (three hours per week); second semester. Open to those who have completed Course 8.

*11. Solid Analytical Geometry

Assistant Professor BUSSEY

Three credits (three hours per week); first semester. Open to those who have completed Course 8.

*12. Differential Equations

Assistant Professor SHUMWAY

Three credits (three hours per week); second semester. Open to those who have completed Course 9.

Text and lectures.

*13. Teachers' Course

Assistant Professor SHUMWAY

One credit (one hour per week); second semester. Open to those who have completed Course 8.

Special attention paid to the fundamental principles of Algebra and Geometry. Text and assigned readings.

For a Major, eighteen credits in Courses 1, 2, 7, 8, 9, or 3, 4, 7, 8, 9, or 2, 6, 8, 9, with an entrance credit in Solid Geometry. Course 13 is also recommended.

Students may select additional work, on the approval of the Committee, from other courses announced in Mathematics.

MUSIC

CARLYLE SCOTT, Professor, Head of Department of Music

301 Washington Ave. S. E.

DONALD FERGUSON, B.A., Instructor for Pianoforte

301 Washington Ave. S. E.

1. Harmony Professor SCOTT
Six credits (three hours per week); both semesters. Open to juniors and seniors.
2. Counterpoint Professor SCOTT
Four credits (two hours per week); both semesters. Open to juniors and seniors who have a thorough knowledge of harmony.
3. Musical Form and Free Composition Professor SCOTT
Two credits (two hours per week); second semester. Open to seniors who have completed Course 1 and the first semester of Course 2.
At the close of the year a program of original composition will be given.
4. Pianoforte Professor SCOTT
Three or six credits (one and a half or three hours per week); both semesters. The fee is thirty-two or sixty-four dollars per semester.
Similar courses for other instruments are offered.
5. Pianoforte, second course Professor SCOTT
Three or six credits (one and a half or three hours per week); both semesters. Open to seniors who have completed Course 4. The fee is thirty-two or sixty-four dollars per semester.
Similar courses for other instruments are offered.
For more advanced courses for pianoforte and other instruments, see Outline of Course, Bulletin of College of Science, Literature, and the Arts, page 36.
6. Choral Culture Professor SCOTT
Two credits (one hour per week); both semesters. Open to juniors and seniors. A single credit may be secured for chorus work. Students may pursue the chorus work without credit by securing consent of the director.
7. Public School Music Mrs. KENDALL
Four credits (two hours per week); both semesters. Open to juniors and seniors.
This course includes methods, harmony, analysis, voice training, composition, and practice teaching. Students are expected to become members of the Chapel choir and to take part in its duties.
8. History of Music Professor SCOTT
Two credits (one hour per week); both semesters. Open to juniors and seniors.
A literary course. Lectures given on the development of Music from the time of Palestrina to the present day.

PHILOSOPHY AND PSYCHOLOGY

NORMAN WILDE, Ph.D., Professor, Head of Department of Philosophy and Psychology	323 Folwell Hall
DAVID F. SWENSON, B.S., Associate Professor	320 Folwell Hall
*JAMES BURT MINER, Ph.D., Assistant Professor	317 Folwell Hall
HERBERT H. WOODROW, Ph.D., Assistant Professor	318 Folwell Hall
AUSTIN S. EDWARDS, Ph.D., Instructor	316 Folwell Hall
HENRY M. SHEFFER, Instructor	320 Folwell Hall

*Absent on leave 1913-14.

INTRODUCTORY COURSES

1a. General Psychology

Assistant Professors MINER and WOODROW, and Mr. EDWARDS
Six credits (three hours per week); both semesters. Open to sophomores, juniors, and seniors.

1b. Elements of Psychology

Associate Professor SWENSON and Mr. SHEFFER
Three credits (three hours per week); each semester. Open to sophomores, juniors, and seniors.

2. Logic

Associate Professor SWENSON and Mr. SHEFFER
Three credits (three hours per week); each semester. Open to sophomores, juniors, and seniors.

The nature of knowledge, the laws of reasoning, and the principles and methods of scientific proof. To produce accuracy of thought as well as to familiarize the student with the logical grounds of modern science. Text-books, lectures, and reports.

GENERAL COURSES

*4. Experimental Psychology Assistant Professor WOODROW
Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Course 1a.

*5. Experimental Psychology Assistant Professor WOODROW
Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Course 4.
The continuation of Course 4.

*7. Psychological Interpretation Assistant Professor MINER
Three credits (three hours per week); first semester. Open to juniors and seniors who have six credits in the department.

*8. Aesthetics Associate Professor SWENSON
Three credits (three hours per week); second semester. Open to juniors and seniors who have six credits in the department.

- *9. Ancient and Mediaeval Philosophy Professor WILDE
Three credits (three hours per week); first semester. Open to juniors and seniors who have six credits in the department.
- *10. Modern Philosophy Professor WILDE
Three credits (three hours per week); second semester. Open to juniors and seniors who have six credits in the department.
- *11. Ethics Professor WILDE
Three credits (three hours per week); each semester. Open to sophomores, juniors, and seniors who have six credits in the department.
12. Philosophy of Religion Associate Professor SWENSON
Three credits (three hours per week); first semester. Open to juniors and seniors who have three credits in the department.
- *13. Psychology of Moral and Religious Development Associate Professor SWENSON
Three credits (three hours per week); second semester. Open to juniors and seniors who have six credits in the department, including three in Psychology.
- *14. Logic of Science Associate Professor SWENSON
Three credits (three hours per week); second semester. Open to juniors and seniors who have nine credits including Course 2.

ADVANCED INTENSIVE COURSES

- *15. Mental Retardation Assistant Professor WOODROW and Mr. KUHLMANN
Two credits (two hours per week); first semester. Open to juniors, seniors, and graduate students who have completed Course 1a.
The nature and conditions of retarded and perverted development in children; the detection of mental defects and the devising of special methods for the training of backward children. Specially designed for those contemplating teaching or social work. The observation of backward children forms a part of the work.
- *16. Advanced Educational Psychology Assistant Professor MINER
Three credits (three hours per week); second semester. Open to seniors and graduate students who have completed Course 1a.
The experimental and statistical methods used in the study of problems in development and education, together with the results of researches in these lines; training for independent psychological investigation of such problems.
- *17. Seminar in Psychology Assistant Professors MINER and WOODROW
Six credits (three hours per week); both semesters. Open to seniors and graduate students who have twelve credits in Psychology. Both semesters must be taken before credit is given for the first semester.
Minor or major research in experimental, educational, analytic, genetic, or comparative psychology.

***22. Seminar in Philosophy**

Professor WILDE and Associate Professor SWENSON

Six credits (three hours per week); both semesters. Open to graduate students and to approved seniors who have twelve credits in the department.

***6. The Philosophy of the Nineteenth Century**

Professor WILDE

Three credits (three hours per week); second semester. Open to seniors who have twelve credits in the department.

***26. The Nervous System and Mental Life**

Professor JOHNSTON

Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students by consent of the instructor. Given in the neurological laboratory of the Medical School and recommended for advanced students in Psychology and Education.

CLINIC IN MENTAL DEVELOPMENT

A free clinic for the study of irregular mental development has been organized by the department. Associate Professor J. P. Sedgwick, of the Medical School, has charge of the physical examinations. Besides the diagnosis of physical and mental condition, treatment is outlined and methods of training are suggested or carried out under the direction of Professor Miner and Mr. Kuhlmann. The clinic is of special advantage to those who are studying retardation.

Students may select additional work, on the approval of the Committee, from other courses announced in Philosophy and Psychology.

PHYSICS

JOHN ZELENY, Ph.D., Professor, Head of Department of Physics

ANTHONY ZELENY, Ph.D., Professor	15 Physics Building
HENRY E. ERIKSON, Ph.D., Assistant Professor	20 Physics Building
ALOIS F. KOVARIK, Ph.D., Assistant Professor	18 Physics Building
LOUIS W. MCKEEHAN, Ph.D., Instructor	19 Physics Building
JAMES C. SANDERSON, Ph.D., Instructor	26 Physics Building
PAUL E. KLOPSTEG, M.S., Instructor	32 Physics Building

1. General Physics Professor ANTHONY ZELENY and Mr. SANDERSON

Three credits (one lecture and two recitations per week); first semester. Open to sophomores, juniors, and seniors who have completed Mathematics 2 or 4. The first part of a general course, continued in Courses 2, 3, and 4; should be taken in conjunction with Course 2, but may be taken separately.

Mechanics of solids and fluids, heat and sound; experimental rather than mathematical; the fundamental principles. One experimental lecture and two recitations each week.

2. General Laboratory Practice

Assistant Professor ERIKSON and Mr. SANDERSON

One credit (two hours per week); first semester. Open to all who have completed or are taking Course 1.

Physical measurements in the mechanics of solids and fluids, and in heat and sound, giving the student a knowledge of experimental methods and an intimate acquaintance with the fundamental facts of the subject.

3. General Physics Professor ANTHONY ZELENY and Mr. SANDERSON

Three credits (one lecture and two recitations per week); second semester. Open to all who have completed Course 1; should be taken in conjunction with Course 4, but may be taken separately.

Light, electricity, and magnetism. The second part of the elementary course; the treatment experimental; the fundamental principles, including those of radioactivity, ionization, X radiation, and the electrical constitution of matter. One experimental lecture and two recitations each week.

4. General Laboratory Practice

Assistant Professor ERIKSON and Mr. SANDERSON

One credit (two hours per week); second semester. Open to all who have completed or are taking Course 3.

Physical measurements in light, electricity, and magnetism.

5. Mechanics of Solids and Fluids

Assistant Professor KOVARIK and Mr. MCKEEHAN

Four credits (four hours per week); first semester. Open to sophomores and juniors who have completed Mathematics 2 or 4 (Trigonometry). The first part of a general course, continued in Course 6, 7, and 8.

A thorough drill in the elementary principles of mechanics; numerous simple problems to illustrate the principles; laboratory work in the last half of the semester only.

6. Heat, Magnetism, and Electrostatics

Assistant Professor KOVARIK and Mr. MCKEEHAN

Four credits (one lecture, two recitations and two hours laboratory); second semester. Open to those who have completed Course 5.

The fundamental principles, mainly from the experimental side; the measurement of the most important quantities involved; lectures to illustrate the various phenomena studied.

*7. Electrokinetics

Professor JOHN ZELENY, Assistant Professor ERIKSON, and Mr. KLOPSTEG.

Four credits (one lecture, two recitations and two hours laboratory); first semester. Open to those who have completed Course 6.

The phenomena accompanying the passage of electricity through solids, liquids, and gases; the various laws which govern such discharges; the basic principles of Electrical Engineering; a brief study of ionization, the X-rays, radioactivity, electric waves, and wireless telegraphy; measurements of the various electrical quantities.

*8. Sound and Light

Professor JOHN ZELENY, Assistant Professor ERIKSON, and Mr. KLOPSTEG

Four credits (one lecture, two recitations and two hours laboratory); second semester. Open to those who have completed Course 5.

Wave motion and the various phenomena of sound and light; lectures, illustrated with experiments showing the various effects studied; laboratory work to aid the student to a better insight into some of the relations.

*9. Advanced Electrical Measurements Professor ANTHONY ZELENY

Two credits (four hours per week); second semester. Open to those who have completed Course 7.

Devoted mainly to the study and measurement of capacity, inductance, and magnetic induction.

10. Physical Manipulation and Laboratory Technique

Professor ANTHONY ZELENY

Three credits (six hours per week); first semester. Open to juniors and seniors who have completed Course 4 or 6.

Especially useful to those who intend to teach the science or to specialize in it. The essential physical manipulations (such as the cleaning and distilling of mercury, soldering, glass blowing, glass cutting, glass grinding, making of quartz fibers, etc.), the use of some instruments of precision (such as the cathetometer, the dividing engine, the balance, mercury air pumps and gauges, etc.).

22. Teachers' Course

Professor ANTHONY ZELENY

One credit (one hour per week); second semester. Open to seniors who have completed or are completing Courses 1 to 4 or 5 to 8 inclusive.

Methods of presentation; selection of lecture and laboratory experiments; laboratory management.

For a Major, Courses 5, 6, 7, 8, and 22 are required together with six credits in Chemistry.

Students may select additional work, on the approval of the Committee, from other courses announced in Physics.

POLITICAL SCIENCE

*WILLIAM A. SCHAPER, Ph.D., Professor 113 Mechanic Arts Building

JEREMIAH S. YOUNG, Ph.D., Associate Professor, Chairman of Department, 1913-14 103 Mechanic Arts Building

CEPHAS D. ALLIN, M.A., LL.B., Associate Professor

101 Mechanic Arts Building

MATTHIAS OLSON, LL.B., Ph.D., Instructor

113 Mechanic Arts Building

*Absent on leave 1913-14.

1. American Government

Professor SCHAPER, Associate Professors YOUNG and ALLIN, and Mr. OLSON

Three credits (three hours per week); each semester. Open to sophomores, juniors, and seniors. A prerequisite for all courses in Political Science except Course 21a.

*2. Comparative Government

Associate Professor ALLIN

Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Course 1 and three additional credits in the department or Course 1 and History 2, 4, or 6.

- *3. The Elements of Jurisprudence Professor SCHAPER
Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Course 1 and three additional credits in Political Science or Economics 1.
7. Municipal Administration Professor SCHAPER and Mr. OLSON
Three credits (three hours per week); second semester. Open to sophomores, juniors, and seniors who have completed Course 1.
- *8. Modern Political Thought Professor SCHAPER and Mr. OLSON
Three credits (three hours per week); second semester. Open to juniors and seniors who have six credits in Political Science.
- *9. Political Parties Professor SCHAPER and Mr. OLSON
Three credits (three hours per week); first semester. Open to juniors and seniors who have six credits in Political Science or Course 1 and History 5.
- *10. Diplomacy Associate Professor ALLIN
Three credits (three hours per week); first semester. Open to juniors and seniors who have six credits in Political Science or Course 1 and History 11.
15. State and Local Government Associate Professor YOUNG
Three credits (three hours per week); second semester. Open to sophomores, juniors, and seniors who have completed Course 1.
- 21a. Elements of Business Law, Part I Associate Professor YOUNG
Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Course 1 or Economics 1.
- 21b. Business Law, Part II Associate Professor YOUNG
Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Course 21a.
For a Major in Government, eighteen credits in Political Science; together with twelve in Economics and six selected from History and Sociology are required.
Students may select additional work, on the approval of the Committee, from other courses announced in Political Science.

RHETORIC AND PUBLIC SPEAKING

JOSEPH M. THOMAS, Ph.D., Professor, Head of Department of Rhetoric and Public Speaking	310 Folwell Hall
MARGARET SWEENEY, Ph.D., Professor	313 Folwell Hall
FRANK M. RARIG, M.A., Assistant Professor	309 Folwell Hall
EDWARD A. COOK, B.L., Assistant Professor	314 Folwell Hall
DANIEL FORD, M.A., Assistant Professor	304½ Folwell Hall
CHARLES W. NICHOLS, M.A., Assistant Professor	410 Folwell Hall

HALDOR GISLASON, B.A., LL.B., Instructor	309 Folwell Hall
ANNA H. PHELAN, Ph.D., Instructor	313 Folwell Hall
B. VINCENT CRAWFORD, M.A., Instructor	312 Folwell Hall
CHARLES E. SKINNER, M.A., Instructor	304½ Folwell Hall
WARREN T. POWELL, M.A., Instructor	410 Folwell Hall
HELEN A. WHITNEY, M.A., Instructor	312 Folwell Hall

RHETORIC

2a. Exposition, Description, and Narration

Professor THOMAS, Assistant Professor COOK, Mr. SKINNER, Mrs. PHELAN, and Miss WHITNEY

Six credits (three hours per week); both semesters. Open to those who have completed Course 1. Students who take both 2a and 2b will receive credit for only one.

2b. Exposition and Argument

Assistant Professor FORD and Mr. CRAWFORD

Six credits (three hours per week); both semesters. Open to those who have completed Course 1. Students who take both 2a and 2b will receive credit for only one.

*3. Studies in Style and Structure

Assistant Professor FORD

Six credits (three hours per week); both semesters. Open to juniors and seniors who have completed Courses 1 and 2.

4. Versification

Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Courses 1 and 2.

*5. Imitative Writing

Professor THOMAS

Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Courses 1 and 2.

*6. Short-Story Writing

Professor THOMAS

Three credits (three hours per week); second semester. Open to juniors and seniors who have shown exceptional proficiency in Course 2a.

*7. Essay Writing

Assistant Professor COOK

Six credits (three hours per week); both semesters. Open to juniors and seniors who have completed Courses 1 and 2.

*9. Seminar in Rhetoric

Professor THOMAS

Six credits (two hours per week); both semesters. Open to seniors and graduate students who have completed Courses 1 and 2 and at least one other course.

*10. Seminar in Writing

Professor THOMAS

Four credits (two hours per week); both semesters. Open to seniors and graduate students who receive permission.

PUBLIC SPEAKING

20. A General Course in Public Speaking

Assistant Professor RARIG, Messrs. GISLASON and CHESNUTT

Six credits (three hours per week); both semesters. Open to those who have completed Rhetoric 1.

*21. Interpretative Reading

Assistant Professor RARIG

Six credits (three hours per week); both semesters. Open to juniors and seniors who have completed Rhetoric 1 and 20.

22. Argumentation and Debate

Mr. GISLASON

Six credits (three hours per week); both semesters. Open to those who have completed Rhetoric 1 and 20, or Rhetoric 1 and training in debating in preparatory school.

*23. Oratorical Composition

Assistant Professor RARIG

Six credits (three hours per week); both semesters. Open to juniors and seniors who have completed Rhetoric 1 and 20.

For a Major, eighteen credits, including Courses 2a and 2b, in addition to Course 1 together with twelve credits in English.

Students may select additional work, on the approval of the Committee, from other courses announced in Rhetoric.

ROMANCE LANGUAGES

*CHARLES W. BENTON, Litt.D., Professor, Head of Department of Romance Languages

200 Folwell Hall

CHARLES M. ANDRIST, M.L., Professor

228 Folwell Hall

JULES T. FRELIN, B.A., Assistant Professor

228 Folwell Hall

CARL M. MELOM, M.A., Instructor

225 Folwell Hall

RUTH SHEPARD PHELPS, M.A., Instructor

223 Folwell Hall

LUTHER WOOD PARKER, M.A., Instructor

223 Folwell Hall

*Died November 11, 1913.

2. Intermediate French

Professor ANDRIST, Assistant Professor FRELIN, Messrs. PARKER and LOSSE

Six credits (three hours per week); both semesters. Open to sophomores and juniors who have completed Course 1. Both semesters must be completed before credit is given for the first semester.

3. Advanced French Grammar and Reading

Assistant Professor FRELIN, Miss PHELPS, and Mr. PARKER

Six credits (three hours per week); both semesters. Open to all who enter the University with two years of French. Both semesters must be completed before credit is given for the first semester.

4. Elementary French Conversation and Composition

Professor ANDRIST and Assistant Professor FRELIN

Four credits (two hours per week); both semesters. Open to those who have completed or who are taking Course 2 or 3.

*5. The Classical Period of French Literature

Professors BENTON and ANDRIST and Assistant Professor FRELIN

Six credits (three hours per week); both semesters. Open to those who have completed Course 2 or 3. Both semesters must be completed before credit is given for the first semester.

*6. Advanced French Conversation and Composition Professor BENTON

Four credits (two hours per week); both semesters. Open to those who have completed Course 2 or 3, or are in Course 5.

*7. French Literature of the Nineteenth Century Professor BENTON

Six credits (three hours per week); both semesters. Open to those who have completed Course 5. Both semesters must be completed before credit is given for the first semester.

*8. Teachers' Course in French

Professor BENTON

Two credits (one hour per week); both semesters. Open to those who have completed Course 7. Both semesters must be completed before credit is given for the first semester.

*9. Romance Philology

Professor BENTON

Two credits (one hour per week); both semesters. Open to those who have completed Course 5. Both semesters must be completed before credit is given for the first semester.

10. Beginning Italian

Miss PHELPS

Six credits (three hours per week); both semesters. Open to sophomores and juniors. Both semesters must be completed before credit is given for the first semester.

*11. Advanced Italian

Miss PHELPS

Six credits (three hours per week); both semesters. Open to juniors, seniors, and graduate students who have completed Course 10. Both semesters must be completed before credit is given for the first semester.

12. Beginning Spanish

Mr. MELOM

Six credits (three hours per week); both semesters. Open to sophomores and juniors. Both semesters must be completed before credit is given for the first semester.

*13. Intermediate Spanish

Mr. MELOM

Six credits (three hours per week); both semesters. Open to those who have completed Course 12. Both semesters must be completed before credit is given for the first semester.

***14. Advanced Spanish**

Mr. MELOM

Six credits (three hours per week); both semesters. Open to those who have completed Course 13. Both semesters must be completed before credit is given for the first semester.

***15. Old Spanish**

Mr. MELOM

Two credits (one hour per week); both semesters. Open to those who have completed Course 13.

For a Major, Course 2 or Course 3 and Course 4, 5, 6, 7, 8, are required.

Students may select additional work, on the approval of the Committee, from other courses announced in Romance Languages.

SCANDINAVIAN

GISLE BOTHNE, M.A., Professor, Head of Department of Scandinavian Languages 218 Folwell Hall

ANDREW A. STOMBERG, M.S., Professor 14 Folwell Hall

1. Elementary Norwegian

Professor BOTHNE

Ten credits (five hours per week); both semesters. Open to all, but juniors and seniors receive only half credit. Both semesters must be completed before credit is given for the first semester.

2. Advanced Norwegian

Professor BOTHNE

Six credits (three hours per week); both semesters. Open to those who have completed Course 1 and to others with the permission of the department. Both semesters must be completed before credit is given for the first semester.

3. Elementary Swedish

Professor STOMBERG

Ten credits (five hours per week); both semesters. Open to all, but juniors and seniors receive only half credit. Both semesters must be completed before credit is given for the first semester.

4. Advanced Swedish

Professor STOMBERG

Six credits (three hours per week); both semesters. Open to those who have completed Course 3 and to others with the permission of the instructor. Both semesters must be completed before credit is given for the first semester.

***5. Old Norse (Icelandic)**

Professor BOTHNE

Four credits (two hours per week); both semesters. Open to seniors and graduate students who have completed Courses 1 and 2, or 3 and 4.

***6. Modern Norwegian Literature**

Professor BOTHNE

Six credits (three hours per week); both semesters. Open to juniors and seniors who have completed Courses 1 and 2. Both semesters must be completed before credit is given for the first semester.

- *7. Swedish Literature Professor STOMBERG
Six credits (three hours per week); both semesters. Open to juniors, seniors, and graduate students who have completed Courses 3 and 4. Both semesters must be completed before credit is given for the first semester.
- *8. Ibsen Professor BOTHNE
Two credits (two hours per week); second semester. Open to seniors and graduate students who have completed Course 6.
- *9. History of Northern Europe Professor STOMBERG
Six credits (three hours per week); both semesters. Open to juniors, seniors, and graduate students who have completed Course 1 or 3 or the equivalent, or Course 1, 2, or 3 in History.
- *10. Early Norwegian Literature Professor BOTHNE
Two credits (two hours per week); first semester. Open to seniors and graduate students who have completed Course 6.
- *11. Modern Danish Literature Professor BOTHNE
Two credits (two hours per week); second semester. Open to juniors, seniors, and graduate students who have completed Courses 1 and 2, or 3 and 4.
- *15. Strindberg Professor STOMBERG
Two credits (two hours per week); first semester. Open to seniors and graduate students who have completed Courses 3, 4, and 7.

FOR GRADUATES

- *12. Modern Swedish Language and Literature Professor STOMBERG
Four credits (two hours per week); both semesters. Open to graduate students who have completed Courses 1 and 2, or 3 and 4.
- *13. History of the Scandinavian Languages Professor BOTHNE
Two credits (one hour per week); both semesters. Open to graduate students who have completed Course 5.
- *14. Old Norse (advanced course); The Elder Edda Professor BOTHNE
Four credits (two hours per week); both semesters. Open to graduate students who have completed Course 5.
- *16. Seminar in Norwegian Literature Professor BOTHNE
Six credits (three hours per week); both semesters. Open to graduate students.
For a Major, eighteen credits not including Courses 1 and 3 are required.
Students may select additional work, on the approval of the Committee, from other courses announced in Scandinavian.

SOCIOLOGY AND ANTHROPOLOGY

SAMUEL G. SMITH, Ph.D., LL.D., Professor, Head of Department of
Sociology and Anthropology 13 Folwell Hall

*ALBERT ERNEST JENKS, Ph.D., Professor 11 Folwell Hall

SAMUEL N. REEP, Ph.D., Assistant Professor 204 Library Building

ALBERT N. GILBERTSON, M.A., Instructor 11 Folwell Hall

*Absent on leave, second semester, 1913-14.

INTRODUCTORY COURSES

1. Descriptive Sociology Professor JENKS and Mr. GILBERTSON
Three credits (three hours per week); each semester. Open to sophomores and juniors.
2. Elements of Sociology Assistant Professor REEP
Three credits (three hours per week); each semester. Open to sophomores and juniors.
3. Culture Anthropology Professor JENKS
Three credits (three hours per week); first semester. Open to juniors and seniors.

GENERAL COURSES

4. Social Pathology Professor SMITH
Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Course 1 or 2 or 3.
5. Social Groups Assistant Professor REEP
Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Course 1 or 2.
6. Ethnology Professor JENKS and Mr. GILBERTSON
Three credits (three hours per week); second semester. Open to juniors and seniors who have completed Course 1.
7. The Study of Institutions Professor SMITH
Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Course 1 or 2.
8. Social Psychology Assistant Professor REEP
Three credits (three hours per week); first semester. Open to juniors and seniors who have completed Course 2 or General Psychology.

ADVANCED COURSES

- *9. Social Theory Assistant Professor REEP
Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have completed Courses 2 or 8, and one other course.

- *10. Biblical Sociology Professor SMITH
Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have six credits in the department.
- *11. The Philippine People Professor JENKS and Mr. GILBERTSON
Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have completed Course 1 or 2, and one other course.
- *12. Physical Anthropology Professor JENKS and Mr. GILBERTSON
Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have completed Course 3 or Course 1 in Animal Biology, and one other course in the department.
- *13. The American Negro Professor JENKS and Mr. GILBERTSON
Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have completed Course 1, and one other course.
- *14. The American People Professor JENKS
Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have completed Course 1 or 2, and one other course.
- *15. The American People (Continued) Professor JENKS and Mr. GILBERTSON
Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have credit for Course 14.
- *16. Modern Social Institutions Assistant Professor REEP
Three credits (three hours per week); first semester. Open to juniors, seniors, and graduate students who have completed Course 1 or 2, and one other course.
- *17. Social Evolution Assistant Professor REEP
Three credits (three hours per week); second semester. Open to juniors, seniors, and graduate students who have completed Course 1 or 2, and one other course.
- *18. Seminar in Social Problems Professor SMITH
Three credits (three hours per week); first semester. Open to seniors, having twelve hours of correlated work, and to graduate students. An advanced course of method and independent research.
- *19. Seminar in Anthropology Professor JENKS
Three credits (three hours per week); first semester. Open to seniors, having twelve hours or correlated work, and to graduate students. An advanced course of method and independent research.
For a Major, eighteen credits are required.
Students may select additional work, on the approval of the Committee, from other courses announced in Sociology and Anthropology.

STUDENTS

CANDIDATES GRANTED M. A. DEGREE, 1912—4

Carl Graham Campbell, Burkeville, Va.
B.A., '07, Minnesota
Major, Education
Minor, Agriculture
Thesis, The Introduction of Agriculture
into the High School

Claude W. Street, Northfield
B.S., '06, Carleton
Major, Education
Minor, Sociology
Thesis, A Plea for All-Year School

D. Edward Hickey, St. Paul
B.A. in Education '10, Minnesota
Major, Education
Minor, Agriculture
Thesis, Agriculture in our High Schools

Huldah Lucile Winsted, Minneapolis
B.A., '11, Minnesota
Major, Education
Minors, Geography, Sociology
Thesis, The Open-Air School Movement

CANDIDATES GRANTED B. A. DEGREE, 1912—41

Edna Viola Anderson, St. Paul
Elma Ruth Anderson, Minneapolis
Marjorie Armstrong, Duluth
Herman Nordahl Bergh, Hendrum
Maybelle Antoinette Bergh, Spring Grove
Elizabeth Bulkley Braden, Minneapolis
Truma Frances Brockway, Minneapolis
Eunice Helene Brotherton, Duluth
Susan Almira Covell, Alexandria
Margaret Gertrude Davis, Minneapolis
Louise Dedolph, St. Paul
Stella Annette Eustis, Owatonna
Eudell Everdell, Minneapolis
Florence Marion Francis, Minneapolis
Emilie Louise Geyman, Minneapolis
Grace Caroline Geyman, Minneapolis
Rosetta Petrine Groettum, Minneapolis
Gertrude Bernard Hall, Minneapolis
Floy K. Hamilton, Minneapolis
Ruth Jessup, Minneapolis
Monica Mary McElroy, Minneapolis

Dorothea Elizabeth Mason, Somerset,
Wis.
Margaret Edna Morrison, Excelsior
Rose Mary Muckley, Minneapolis
Adelya M. Nelson, Center City
Anna Edith Nelson, Minneapolis
Ebba Marie Norman, Minneapolis
Mabel Josephine Norman, Ortonville
Vivian Holmes Norwood, Minneapolis
Grace L. O'Neil, Minneapolis
Mary Gertrude O'Neil, Grand Forks,
N. D.
Oswald B. Overn, Albert Lea
Eunice B. Owen, Minneapolis
Mary Jessie Palmer, Minneapolis
Janet Ruth Rankin, Minneapolis
Marie Madeline Shelley, Minneapolis
Ethel M. Smith, Minneapolis
Ruth Genevieve Smith, Minneapolis
Nellie Wheelock, Minneapolis
Effie Mathilda Wicklund, Bingham Lake
Edna Ruth Winter, Faribault

SENIORS—42

Ackerman, Emma H., Winnebago
Anderson, Olaf B., Jeffers
Baker, George M., Hopkins
Batzer, Eliza A., Royalton
Bowman, Edith K., St. Paul
Brown, Clara M., International Falls
Brunelle, Henry D., Cloquet
Campton, Charles E., Minneapolis
Clark, Mrs. Addie H., Janesville
Conary, Helen B., Minneapolis
Cummins, Nora B., Aberdeen, S. D.
Davy, Margaret M., Minneapolis

De Leo, Bessie N., Minneapolis
Dix, Esther M., Elroy, Wis.
Ellertson, Ottillia, Minneapolis
Griswold, Frances E., Minneapolis
Haigh, Margaret, Mankato
Hall, Ruth E., Minneapolis
Halvorson, Florence A., Duluth
Hansen, Ruth M., Duluth
Harkness, Ida M., Mabel
Hilton, Geneva M., Minneapolis
Holtan, Marie A., Kenyon
Leavitt, Minnie S., St. Paul

Livermore, Laura L., Minneapolis
 Lumm, Fannie M., Duluth
 McLaughlin, Alice M., Fergus Falls
 Mayer, Alma L., New Ulm
 Moe, Nellie A., Strandburg, S. D.
 Mountain, Luella E., Good Thunder
 Nelson, N. Frank, Heron Lake
 Pfeiffer, Eleanor L., Mankato
 Rader, Vera, Delano

Schulte, Henry F., Plato
 Snortum, Kenneth O., Canby
 Stiles, Lenna M., Willmar
 Storlie, Carl J., Whalen
 Utne, Andrew O., Dalton
 Wallace, Lula M., Minneapolis
 Willard, Clara E., Dalton
 Zanger, Julia M., Minneapolis
 Zeien, Rosalie A., North Branch

JUNIORS—41

Allen, Hazel, Duluth
 Anderson, Herman F., St. Hilaire
 Atwood, Marjorie H., St. Cloud
 Barr, Ruth K., Mankato
 Birkeland, Martha, Houston
 Blase, Susan A., St. Paul
 Falk, Herbert A., Norwood
 Gjernes, Knut O., Alexandria
 Hanson, Orlando M., Moorhead
 Hendrickson, Clara, Willmar
 Holzinger, Karl J., Winona
 Hoovel, Velma C., Jackson
 Klima, William, Silver Lake
 Krauch, Elsa P., St. Paul
 Lorentzen, Ella, Willmar
 McCray, Florence L., Minneapolis
 McElroy, Mary, Minneapolis
 McKenzie, E. Belle, Mankato
 McLane, Genevieve M., Minneapolis
 McQuilkin, Margaret, Minneapolis

Wolff, Martha, St. Paul

Miller, Clara, Wells
 Pender, Nellie M., St. Paul
 Peterson, Mabel C., New Ulm
 Pritchard, Elizabeth, Minneapolis
 Quickstad, Nathaniel J., St. Cloud
 Quigley, Jo Evelyn, Bird Island
 Raymond, Elizabeth, Minneapolis
 *Scheidecker, Alyce E., Superior, Wis.
 Sevatson, Lillian, Minneapolis
 Smith, E. May, Minneapolis
 Steadman, Marja B., Livingston, Mont.
 Tarbox, Vivian I., Monticello
 Thompson, Inez, Blair, Wis.
 Treibel, Emma A., St. Paul
 Trieloff, Anna M., Carver
 Spencer, Cassie R., Park Rapids
 Von Levern, Amelia, St. Cloud
 Watschke, John F., New Ulm
 Wiecking, Anna M., Mankato
 Wiecking, Martha M., Mankato

UNCLASSIFIED—11

Castner, Theron S., Minneapolis
 Cullen, Elizabeth, Minneapolis
 Granner, John P., Minneapolis
 Hart, Mabel R., Minneapolis
 Hegel, Edith, Minneapolis
 Johnson, Arthur W., Moorhead

*Deceased

Magnussen, Jennie M., Harris
 O'Meara, Sarah T., St. Charles
 Robinson, Harriet M., Minneapolis
 Rowell, Kathryn M., Minneapolis
 Sand, Anna, Elbow Lake



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